

LAWRENCE LIVERMORE NATIONAL LABORATORY
IMPLEMENTING PROCEDURES
for
DOE ORDER 232.1A

OCCURRENCE REPORTING AND
PROCESSING OF OPERATIONS INFORMATION

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Revision 1.2
March 1998

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1. PURPOSE

To establish Laboratory procedures for reporting and processing of operations information in compliance with the occurrence reporting requirements set forth in DOE Order 232.1A (effective March 1998).

2. CANCELLATION

This document supersedes Lawrence Livermore National Laboratory Implementing Procedures—DOE Order 232.1, Revision 1.1, October 1996.

3. SCOPE

These procedures apply to all Laboratory employees and LLNL subcontractors performing work onsite at LLNL, or at DOE-owned or DOE-leased facilities when LLNL has the primary management responsibility for the operation. They are intended to provide the information necessary for the Laboratory to meet the requirements of DOE Order 232.1A and DOE Manual 232.1-1A.

These procedures describe the requirements for categorizing, reporting, and processing information about events or conditions related to Laboratory-controlled or-managed buildings, experiments, or other activities in support of Laboratory operations that meet the Site-specific Reportable Occurrence definitions set forth in Attachment II.

4. AVAILABILITY

These procedures, including Attachment I (Categorization of Occurrences at LLNL—Definitions), Attachment II (Site-specific Reportable Occurrences), Attachment III (Instructions for Completing an Occurrence Report), and Attachment IV (Occurrence Report Format, LLNL) are available on a file server in the Occurrence Reporting Office (ORO).

To access the ORO file server to obtain the latest version of the LLNL Implementing Procedures:

- (1) Go to the "Chooser" and select "Appleshare";
- (2) Select "B323" under *Appletalk Zones* on the left;
- (3) Select "ORO Server" under *Select a file server* on the right and click on OK;
- (4) Log on as a "Guest" and click OK;
- (5) Highlight "ORO Form/Order/IP" folder or folder of interest (**do not X the box**) and click OK;
- (6) Close the Chooser;
- (7) Copy what you need onto your hard drive and put the shared folder "ORO Form/Order/IP" in the trash.

Assurance Managers, Assurance Officers, and other LLNL personnel can request access to folders on the ORO Server. Request your Assurance Manager to have the ORO add your name to the appropriate folder user group. If you have questions, contact the ORO on 2-8966.

5. REFERENCES

- A. DOE Order 232.1A, including DOE Manual 232.1-1A, "Occurrence Reporting and Processing of Operations Information," effective March 1998.
- B. DOE Order 151.1, "Comprehensive Emergency Management System."
- C. DOE Order 1324.5B, "Records Management Program."
- D. *LLNL Health and Safety Manual*, Chapter 4, February 1996.
- E. DOE Order 5480.19, "Conduct of Operations Requirements for DOE Facilities."
- F. DOE-STD-1045-93, "Guide to Good Practices for Notification and Investigation of Abnormal Events."
- G. DOE-NE-STD-1004-92, DOE Guideline, "Root Cause Analysis Guidance Document."
- H. DOE/OAK letter to Dr. Dennis K. Fisher, subject "Guidance on Reporting Procedures for Enforcement Actions Related to Violations of Environmental Requirements," December 1, 1993.
- I. DOE/OAK letter to Dr. Dennis K. Fisher, Subject, "Reporting of Operational Occurrence to DOE," January 3, 1994.
- J. DOE documents referenced in these Procedures and DOE Order 232.1A:
 - 10 CFR Part 302
 - 10 CFR Part 835
 - G 10 CFR Part 835
 - 19 CFR Part 1904
 - 29 CFR 1910
 - 29 CFR 1910.1000
 - 29 CFR 1910.1200
 - 40 CFR 117
 - 40 CFR 172.101
 - 40 CFR 261-262
 - 40 CFR 302
 - 40 CFR 355
 - 49 CFR 171.8
 - 49 CFR 173.401-476
 - 49 CFR 173.421.1(a)
 - DOE O 151.1
 - DOE O 225.1
 - DOE O 360.1
 - DOE O 440.1
 - DOE O 1324.5B
 - DOE O 5400.5
 - DOE N 5400.13
 - DOE O 5480.19
 - DOE O 5480.23
 - DOE O 5480.30
 - DOE O 5632.7A
 - DOE-STD-3009-94
 - UCRL-MA-108269

6. DEFINITIONS

The following key definitions are set forth for use in better understanding the essential elements of the LLNL Implementing Procedures for DOE Order 232.1A (Reference A). For a more complete and comprehensive list of definitions related to Occurrence Reporting, see Attachment I.

- A. Event Something significant and real-time that happens (e.g., pipe break, valve failure, loss of power, environmental spill, earthquake, tornado, flood).
- B. Condition. Any as-found state, whether or not resulting from an event, which may have adverse safety, health, quality assurance, security, operational, or environmental implications. A Condition is more programmatic in nature; for example, an error in analysis or calculations, an anomaly associated with design or performance, or an item indicating a weakness in the management process are all Conditions.

- C. Discovery. The point in time when an event or condition is discovered. This might be the time that a sprinkler activates, a vehicle accident occurs, an earthquake occurs, a person is injured, it is realized that a safety analysis is incorrect, etc.
- D. Categorization. The process of verifying that an event or condition is a reportable occurrence and selecting at least one of the Groups and Sections from Attachment II of this procedure. This process may necessitate gathering additional information, consulting with ORO, and holding discussions with Hazards Control and/or EPD.
- E. Cognizant AD. The Cognizant Associate Director (AD) is the AD who will determine the causes of an event or incident, recommend the corrective actions, and submit update and final reports. (See Section 8.A.[2], Line Management.)
- F. Facility. Any equipment, structure, system, process, or activity that fulfills a specific purpose. Examples include accelerators; storage areas; fusion research devices; nuclear reactors, production or processing plants; coal conversion plants; magneto hydrodynamics experiments; windmills; radioactive waste disposal systems and burial grounds; environmental restoration activities; testing laboratories; research laboratories; transportation activities; and accommodations for analytical examinations of irradiated and unirradiated components. For the purpose of implementing DOE Order 232.1A, LLNL, including Site 300, is considered to be one Facility.
- G. DOE Facility Representative. For each major facility or group of lesser facilities, an individual or his/her designee is assigned responsibility by the Head of the Field Element/Operations Organization for monitoring the performance of the facility and its operations. This individual should be the primary point of contact with the Laboratory and will be responsible to the appropriate Secretarial Officer and the Head of the Field Element/Operations Organization for implementing the requirements of DOE Order 232.1A (Reference A). The Manager, Oakland Operations Office (DOE/OAK), has designated DOE Facility Representatives for all LLNL facilities. The Manager has also designated DOE/OAK Duty Officers for LLNL, and they are the DOE Facility Representative designees for the purpose of receiving initial DOE/OAK oral notifications and being available at all times in accordance with the requirements of Paragraph 4 of DOE Order 232.1A and Paragraph 5.3 of DOE Manual 232.1-1A.
- H. Facility Manager. That individual or designee who has direct line responsibility for operation of a facility, or group of lesser facilities, including authority to direct physical changes to the facility. The Laboratory Director is the LLNL Facility Manager. The on-duty Laboratory Emergency Duty Officer (LEDO) is the duly authorized designee of the LLNL Facility Manager for ensuring that the initial identification, categorization, and reporting provisions of DOE Order 232.1A are carried out. The on-duty Occurrence Reporting Duty Officer is the duly authorized designee of the LLNL Facility Manager for the actual submission of DOE oral notifications and initial written notification reports as required by the DOE Order. The Occurrence Reporting Duty Officer is also responsible for assisting the LEDO and line management in categorization. The Facility AD and his or her line managers are the duly authorized designees of the LLNL Facility Manager for the identification of abnormal events and conditions, categorization of occurrences, and preparation of the initial Notification Reports. The cognizant AD shall prepare Update and Final Reports for occurrences in his or her respective buildings, facilities, or operations. The cognizant AD is also responsible for identifying, tracking, and closing all corrective actions identified in Final Occurrence Reports. The ORO Administrator and the ORO Duty Officers are the LLNL Facility Manager designees for the transmission of all reports into the DOE Occurrence Reporting and Processing System (ORPS).
- I. Notification Report. The initial documented report to DOE of an event or condition that meets the site-specific reporting criteria defined in Attachment II to this procedure. The Notification Report shall consist of Fields 1 through 19 and Field 25 of the Occurrence Report as specified in Attachments III and IV to this procedure.

- J. Occurrence Report. A documented evaluation of an event or condition that is prepared in sufficient detail to enable the reader to assess its significance, consequences, or implications and to evaluate the actions being proposed or employed to correct the condition or avoid recurrence.
- K. Reportable Occurrence. Events or conditions to be reported in accordance with the criteria defined in Attachment II to this procedure.

7. POLICY

It is the policy of the Laboratory to encourage a positive attitude toward reporting occurrences and to encourage all employees to bring to the attention of his or her line supervisor events or conditions that are not planned or typical of normal operations. Specifically, it is Laboratory policy to ensure:

- A. The timely identification, categorization, notification, and reporting to Laboratory management of all Reportable Occurrences (see Attachment II) at the Laboratory or resulting from Laboratory-controlled operations;
- B. The timely reporting by management to the Laboratory ORO, Occurrence Reporting Duty Officer, and the LEDO those events or conditions that meet the definition of a Reportable Occurrence (see Attachment II);
- C. Maintenance of a centralized Laboratory ORO for the transmission of all reports into ORPS and for maintaining a centralized file containing hard copies of all Laboratory Occurrence Reports and supporting information in consonance with the provisions of DOE Order 1324.5B (Reference C);
- D. The timely submission of Notification, Update, and Final Occurrence Reports in accordance with the requirements set forth in Paragraph 8 below, and the timely evaluation and implementation of appropriate corrective actions; and
- E. The review of reportable occurrences to assess significance, root causes, generic implications, and the need for corrective actions and the dissemination of applicable information throughout the Laboratory to prevent similar occurrences.

8. IMPLEMENTATION REQUIREMENTS AND REPORTING PROCESS

A. Responsibilities.

- (1) Occurrence Reporting Office. A Laboratory ORO has been established to provide a single point of contact for the Laboratory on all aspects of occurrence reporting. The ORO is responsible for providing assistance to Laboratory line management and the LEDO in the categorization of events and in making initial notifications to the cognizant DOE Program Senior Official, DOE/OAK, and Laboratory senior management. The ORO shall maintain a Duty Officer (see the current "LLNL Emergency Contact Roster," published weekly) who is on call 24 hours per day in order to meet the requirement of Paragraph 4b of DOE Order 232.1A (Reference A), which calls for the Facility Manager or Facility Manager designee to be available at all times to carry out occurrence reporting. Further, the ORO is responsible for providing access to the DOE Occurrence Reporting and Processing System (ORPS) database. The ORO is also responsible for providing documentation of changing reporting requirements and promulgation of necessary changes to the LLNL Occurrence Reporting Implementing Procedures; providing training for Laboratory employees and supervision in reporting requirements and procedures; providing the centralized repository for all supporting information pertaining to each occurrence report in accordance with DOE Order 1324.5B; providing directorates with information related to due dates on written reports and corrective

actions; notifying them when a Final Report has been rejected; and providing distribution of reportable occurrence information to the Environmental, Safety & Health (ES&H) Working Group for sharing and discussion, and the Laboratory Assurance Review Office for analysis and trending.

- (2) Line Management. The responsibility for initial reporting of occurrences is assigned to the Facility AD having direct responsibility for the affected work area of the occurrence.

- Within buildings/facilities, the Facility AD has primary responsibility for reporting occurrences.
- Outside of buildings/facilities, the Laboratory Site Manager is responsible as the "Facility AD" for the infrastructure, as a result of either Plant Operations or the Environmental Protection Department (EPD) being the organization primarily involved.
- For vehicle occurrences, the Program AD of the driver shall make the initial report.

After initial reporting requirements have been met, the Facility AD shall transfer reporting responsibility to the AD conducting the particular operation that caused the event (if that AD is different from the Facility AD). It is the responsibility of every organization, in whatever capacity, to promptly report events and conditions to the Facility AD's assurance office, and to cooperate in developing the necessary information for an occurrence report. The cognizant AD, or others as delegated by him or her, will comply with the detailed reporting requirements outlined below, ensuring the timeliness and completeness of reports and the follow up and closure of action items identified in their reports.

- (3) ES&H Working Group. The ES&H Working Group will review occurrence reporting information, provided by the ORO, and trending information provided by the Laboratory Assurance Review Office. The ES&H Working Group may disseminate to appropriate Laboratory personnel operations information obtained from the ES&H Working Group's review in order to reinforce good practices and avoid events and conditions that could lead to further reportable occurrences or degradation of operations.
- (4) Assurance Review Office. The Laboratory Assurance Review Office will review Laboratory occurrence reporting information and occurrence reports from other similar DOE contractors (e.g., Los Alamos National Laboratory, Sandia National Laboratories, and Lawrence Berkeley Laboratory) in order to develop trending information and obtain lessons learned that may benefit Laboratory operations. Trend analysis and lessons learned information will be brought to the attention of the ES&H Working Group and appropriate Laboratory management in semi-annual reports.

B. Event or Condition Identification.

- (1) Laboratory personnel take appropriate immediate action to stabilize and/or place the facility/operation/situation in a safe condition. In addition, actions should be taken to preserve conditions for continued investigation; however, these actions are not to interfere with establishing a safe condition.
- (2) The facility staff and operators shall, upon identification of an abnormal or suspected abnormal event or condition, promptly notify the facility line management of the event or condition and/or archive all pertinent information to include details concerning the discovery of the occurrence and actions taken to stabilize or place the facility/operation/situation in a safe condition.
- (3) Line management should contact the LEDO as soon as any potential reportable occurrence is identified to alert him to the possibility that occurrence report notifications

will need to be made. As soon as categorization has been made, line management will contact the LEDO and the ORO/ORO Duty Officer with the information needed to make any initial oral notifications.

- C. Event or Condition Categorization. The Facility AD's line management is responsible for ensuring that an event or condition is categorized as UNUSUAL or OFF-NORMAL. The categorization shall be made as soon as practical and, in all cases, within **two hours** of identification as a reportable occurrence and shall be based upon the Site-Specific Reportable Occurrences set forth in Attachment II to these procedures. If categorization is not clear, then the occurrence shall be categorized initially at the higher level being considered and appropriate notifications made. The occurrence categorization shall be either elevated, maintained, or lowered as further information is made available.

There are three categories of reportable occurrences that require prompt reporting to Laboratory management and DOE: **EMERGENCY, UNUSUAL, or OFF-NORMAL**. Attachment II contains listings of LLNL site-specific events or conditions which constitute unusual and off-normal "reportable occurrences." These are intended to assist line management in properly categorizing a reportable occurrence. The LEDO, Laboratory ORO, or the ORO Duty Officer will assist line management, as needed, in categorizing occurrences.

NOTE: For **EMERGENCIES**, the requirements for the initial and follow-up notifications to DOE and other agencies and the appropriate emergency responses to be taken are provided in DOE Order 151.1 (Reference B). The specific procedures on how these events are categorized and how and when DOE is notified are set forth in Chapter 5 of the LLNL Emergency Plan. If an event is declared an Emergency, the Incident Commander, LEDO or the Emergency Management Center, assisted by the ORO Duty Officer, will categorize the event and make the initial and follow-up oral notifications to DOE and other agencies. The Facility AD will be responsible for the written notification report and for the completion of all other written reporting requirements described below.

To assist in the categorization, each AD shall develop and maintain a listing of the Safety Class Structures, Systems, and Components (SSC) for its nuclear facilities and Safety Significant SSC for both its nuclear and non-nuclear facilities based upon the definitions contained in Attachment I to these procedures for Safety Class SSC and Safety Significant SSC.

- D. Notification. The emphasis for both oral and written notification reports shall be on providing clear and succinct descriptions of the occurrence, brief and concise descriptions of the operating conditions at the time of the occurrence, and the immediate actions taken, including results if known. Fields 1-19 and Field 25 of the DOE Occurrence Report Format (see Attachment III to these procedures) shall be used. Timeliness in initial oral reports should take precedence over completeness of details for EMERGENCY and UNUSUAL occurrences.

NOTE: Consider the classification implications of the information that you are developing - see Paragraph 8.D.[4]). Requirements for oral and written notification reports are as follows:

- (1) Oral Notifications. Line management is responsible for the timely notification of the LEDO and the ORO/ORO Duty Officer once the occurrence is categorized and for providing sufficient information to make the initial oral notification to DOE/OAK and DOE Headquarters (HQS) as indicated below (**Note:** The actual calls will be made by the ORO/ORO Duty Officer; however, the LEDO may elect to make the initial call under certain circumstances):

EMERGENCY — Notifications made by the Incident Commander, LEDO, Emergency Management Center in accordance with the provisions of the LLNL Emergency Plan as discussed in Paragraph 8.C. above. The oral notification shall be made within 30 minutes of categorization as an OPERATIONAL

EMERGENCY occurrence, and within 15 minutes for an ALERT, SITE AREA, or GENERAL EMERGENCY involving the release of Hazardous Materials.

UNUSUAL — Telephone the DOE/OAK Operations Duty Officer for LLNL (as designated on the LLNL Emergency Contact Roster) and the DOE Headquarters Emergency Operations Center (EOC) within two hours of categorization. Notify the Director's Office as soon as possible. An electronic transmittal, such as a facsimile, is preferred when notifying the DOE Headquarters EOC. All notifications shall include a valid contact point, including name and telephone number. Electronically transmitted reports must be confirmed by phone to ensure receipt and document the time of official notification. Initial oral notification shall include as many of the fields noted in 1-19 and 25 of the LLNL Occurrence Report format specified in Attachment III as possible within the time constraints.

OFF-NORMAL — No telephone notification to DOE Headquarters is required. However, the DOE/OAK Operations Duty Officer for LLNL and the Director's Office shall be notified that an Off-Normal Occurrence has been categorized. A written Notification Report will be submitted to the ORPS.

- (2) Follow-up Oral Notification. In addition to the initial oral notifications outlined in Paragraph 8.D.(1) above, follow-up oral notification shall be made to the DOE/OAK Operations Duty Officer for LLNL, the DOE Headquarters EOC, and the Director's Office for any of the following:
 - (a) Any further degradation in the level of safety or other worsening conditions, including those that require the declaration of an Emergency, if such a declaration has not been previously made;
 - (b) Any Off-Normal Occurrence that is upgraded to an Unusual Occurrence. They shall be notified that an existing occurrence has been upgraded and provided with the Occurrence Report number.
- (3) Written Notification Report. For all occurrences, line management shall ensure that an initial, written Notification Report is submitted to the ORO at least 1 hour before the close of the next working day from the time of categorization (not to exceed 80 hours). The initial written Notification Report shall consist of Fields 1-19 and 25 of the LLNL Occurrence Report format as specified in Attachment III to these procedures. The initial Notification Report shall be transmitted by FAX, e-mail, or hand delivery to the ORO (FAX: 3-5965, verify 2-8966) (e-mail: ORO) (delivery—Building 323, Room 3016) for logging and appropriate submission to the DOE ORPS. Distribution requirements for occurrence reports are met when the unclassified Notification Report is entered into the ORPS electronic database. Therefore, it is very important that the time constraints outlined above be met for all written Notification Reports.

Any changes in categorization (including canceling a report) that occur once a written Notification Report has been submitted to ORPS shall be documented in an Update Report and submitted before the close of the next working day from the time of recategorization (not to exceed 80 hours). A justification for the new categorization shall be included in Field 19 of the Update Report.
- (4) Classification Requirements. Occurrence reports that are the result of events or conditions in facilities/buildings or operations wherein classified information may be generated must be reviewed by an Authorized Derivative Classifier (ADC) prior to being submitted to the ORO for entry in ORPS. The ADC will check the appropriate box on Page 1 of the LLNL Occurrence Report Form (see Attachment IV of these procedures), and affix her/his signature after the statement indicating that the report has been

reviewed and determined to be unclassified. Reports that contain administrative information only or originate in a Designated Unclassified Subject Area (DUSA) shall be so identified by marking the appropriate box on Page 1 of the LLNL Occurrence Report Form. The originator shall affix her/his signature after the appropriate statement.

NOTE: One of the three boxes relating to the possible content of classified information on the LLNL form must be checked and a signature affixed). Field 8 must also be completed on all reports indicating that the report does not contain Unclassified Controlled Nuclear Information (UCNI). No classified or UCNI should be entered in ORPS or transmitted via unsecured communications.

If an Occurrence Report must contain classified information or UCNI, it cannot be entered in ORPS. A hardcopy report must be generated and distributed to the DOE Facility Representative and Program Manager in accordance with DOE Order 232.1A (Reference A) and the appropriate DOE 5635-series Orders. An unclassified version of the Occurrence Report shall then be generated, reviewed by an ADC and the LLNL Classification Office, and then entered into the ORPS. Contact the ORO for further guidance and assistance in the event a classified Occurrence Report needs to be prepared. All classified Occurrence Reports should be delivered to DOE/OAK Classified Document Control Center (CDCC), in care of the appropriate Facility Representative, U.S. DOE, Oakland Operations Office, Safeguards & Security Division, P.O. Box 1111, Livermore, CA 94551-1111.

- E. Occurrence Investigation and Analysis. The *LLNL Health and Safety Manual*, Chapter 4 (Reference D), sets forth LLNL policy and procedures for the notification, analysis, and reporting of all incidents. The policy and procedures outlined therein are also applicable to occurrence reporting and consistent with these implementing procedures. The procedures outlined in the *LLNL Health and Safety Manual* (Reference D) for preserving the incident scene and conducting incident analysis shall be followed in the investigation and analysis of all reportable occurrences. The investigative process is used to gain an understanding of the occurrence, its causes, and the corrective actions necessary to prevent recurrence.

DOE Order 5480.19, "Conduct of Operations Requirements for DOE Facilities" (Reference E), and DOE-STD 1045-93, "Guide to Good Practices for Notification and Investigation of Abnormal Events" (Reference F), should also be considered when conducting the investigation of reportable occurrences. In some occurrences, especially those requiring the establishment of an "Incident Analysis Committee," as set forth in Paragraph 4.4.4 of *LLNL Health and Safety Manual* (Reference D), the use of one or more of the formal analytical models discussed in DOE-NE-STD-1004-92, DOE Guideline, "Root Cause Analysis Document" (Reference G), should be considered.

- F. Subsequent Written Reports. Line management is responsible for the timely submission of Update and Final Occurrence Reports. These written reports shall be prepared using the occurrence report instructions and format contained in Attachments III and IV to these procedures. Requirements for the submission of these subsequent written reports are as follows:

- (1) Update Reports. Any changes upgrading the categorization shall be documented in an Update Report and submitted to the ORO at least 1 hour before the close of the next working day from the time of recategorization (not to exceed 80 hours). A justification for the new categorization shall be included in the report in Field 19.

An Update Report shall be submitted to the ORO if there is any significant and new information about the occurrence, to include the status of the investigation. Recurring consequences or the identification of additional component defects, resulting from the occurrence investigation, are activities associated with the occurrence and shall be included in Update Reports.

If the occurrence investigation and analysis necessary to prepare a Final Report cannot be completed within 45 calendar days after categorization, an Update Report shall be submitted to the ORO within the 45 days. The explanation for the delay shall be reported in the "Evaluation" block (Field 24) of the Update Occurrence Report. The new date for completion shall be entered in the "Further Evaluation" block (Field 25), along with the name of the person responsible for completion. Other information required in this block shall also be marked as appropriate.

If, after disapproval of a Final Report, a revised Final Report cannot be submitted within 21 calendar days of the disapproval, an Update Report shall be submitted within the 21 calendar days. The Update Report shall explain the delay and provide an estimated date for resubmittal of the Final Report. This information shall be reported in the "Evaluation" block (Field 24) of the Occurrence Report.

The words "Estimated date for submittal of the Final Report: mm/dd/yy" will also be entered into Field 32.

- (2) Final Reports. A Final Report shall be prepared when the investigation and analysis of the occurrence has been completed, root cause(s) and contributing cause(s) finalized, corrective action(s) determined and scheduled, and lessons-learned identified. (Note: it is not necessary to complete corrective actions before submitting a Final Report.) The Final Report shall be submitted to the ORO at least 1 hour before the end of the 45th calendar day from categorization. Final Reports must be signed by the cognizant AD or his/her designee prior to submission to the ORO.

If the Final Report cannot be completed within the 45 calendar day period, an Update Report must be prepared and submitted as specified in Paragraph 8.F.(1) above.

If a "Corrective Action" cannot be completed by the original target date, the target completion date must be extended by the ORO with the appropriate justification from the cognizant AD or his/her designee.

This extension must be requested before the original target date established in the Final Report.

Corrective Action completion dates for Final Occurrence Reports must be submitted to the ORO for updating Final Occurrence Report Corrective Actions on the ORPS database. Line Management is responsible for tracking corrective actions to completion and notifying the ORO of their status.

If the Final Report is not approved by DOE, the report will be returned to the cognizant AD/line manager with an explanation for the disapproval. The revised Final Report shall be resubmitted within 21 calendar days of receipt of the disapproval. If it cannot be resubmitted within this time period, then an Update Report shall be submitted within the 21 days and shall include a detailed explanation of the delay and an estimated date for resubmittal of the Final Report (see Paragraph 8.F.[1] above).

- (3) Classification Requirements. Update and Final Occurrence Reports shall be reviewed and marked as indicated in Paragraph 8.D.(4) above. All Occurrence Reports must have one of the three statements on Page 1 of the format (Attachment IV) marked and have Field 8 completed.

In addition to the above requirements, all Final Occurrence Reports must receive an additional review by the LLNL Classification Office after they have been reviewed by an ADC and determined to be unclassified, before being submitted to the ORO.

- G. Roll-Up Occurrence Reports for Off-Normal Occurrences. Two basic types of Roll-Up Reports are permitted for Off-Normal Occurrences. However, Roll-Up Reports are not used by LLNL. If a Roll-Up report is necessary, refer to DOE Order 232.1A (Reference A) and contact the ORO for assistance.
- H. Utilization of Reportable Occurrence Information. Line management should use the information obtained in the generation of occurrence reports to identify and correct deteriorating conditions. In addition, they should share this information with other organizations at the Laboratory through the ES&H Working Group as indicated in Paragraph 8.A.(3) above.

The ES&H Working Group will periodically review and discuss occurrence reporting information in order to reinforce good practices and avoid events and conditions that could lead to further reportable occurrences or degradation of operations. This information will be disseminated to appropriate Laboratory personnel as necessary (see Paragraph 8.A.[3]).

The Assurance Review Office will review occurrence reports from this Laboratory and other DOE contractors in order to identify trends, lessons learned, and good practices which may benefit Laboratory operations. This information will be provided to the ES&H Working Group, appropriate Laboratory management, and/or specific organizations that would benefit from it. (See Paragraph 8.A.[4] above.)

- I. Training. Training programs shall be established to assist in carrying out the Laboratory's Occurrence Reporting Implementing Procedures. Responsibilities for these programs are as follows:

- (1) Occurrence Reporting Office. The ORO shall establish a training course, EM-2010, which indoctrinates personnel in the philosophy of occurrence reporting as outlined in DOE Order 232.1A (Reference A) and in the requirements of these Implementing Procedures. This course will be made available to Laboratory personnel on an "as-needed" basis. Submit a completed Course Registration Form (see current edition of the LLNL Course Catalog Bulletin) to your payroll department training coordinator.

If an organization wants to have a session of EM-2010 conducted for its personnel, and has 15 or more students and a suitable facility with a viewgraph projector, the organization should contact the ORO (ext. 28966), or a memo to L-388).

The ORO is responsible for providing the Laboratory's centralized link to the DOE ORPS. However, Laboratory organizations can have access to ORPS as "General Users" in order to review occurrence reporting information, corrective action due dates, etc. Training courses are available through DOE on the ORPS. Contact the ORO for details regarding establishing an ORPS "General User" data link and/or and ORPS user training course.

- (2) Line Management. Line management is responsible for ensuring that sufficient personnel are trained in the requirements of these Implementing Procedures so that reportable occurrences can be identified and categorized promptly, and that reports can be properly completed in the time frames specified. DOE Guideline, "Root Cause Analysis Guidance Document" (Reference G) should be considered as the basis for analyzing root cause(s); detailed training in root cause analysis is available from DOE. Contact the ORO for details.

LLNL IMPLEMENTING PROCEDURES
for
DOE ORDER 232.1A
CATEGORIZATION OF OCCURRENCES AT LLNL

GENERAL INFORMATION

The Facility AD is responsible for ensuring that an event or condition is categorized. The categorization shall be made as soon as practical and, in all cases, within **two hours** of identification as a reportable occurrence

The Attachment II listing of LLNL site-specific events or conditions is intended to assist management in properly categorizing a reportable occurrence. The listing is divided into ten major groups to assist users in quickly identifying potentially reportable occurrences. These are: (1) Facility condition; (2) Environmental; (3) Personnel safety; (4) Personnel radiation protection; (5) Safeguards and security; (6) Transportation; (7) Value basis reporting; (8) Facility status; (9) Nuclear explosive safety; and 10) Cross category items.

If categorization is not clear, the occurrence shall be categorized initially at the higher level being considered. A change in categorization to a lower level can be made by submitting an Update Report with justification as to the change in category. For a change in categorization, an Update Report must be submitted to the ORO at least 1 hour before the close of the next business day (not to exceed 80 hours).

For assistance in categorization, contact the LEDO, Laboratory Occurrence Reporting Office (ORO) or the ORO Duty Officer.

NOTE: For **EMERGENCIES**, the requirements for the initial and follow-up notifications to DOE and other agencies and the appropriate emergency responses to be taken are provided in DOE Order 151.1 (Reference B). See Paragraph 8.C. of the Implementing Procedures.

DEFINITIONS

The following is a list of definitions designed to avoid confusion in using Attachments II, III, and IV and to avoid repetition in the body of the procedures.

- 1. COGNIZANT SECRETARIAL OFFICER (CSO).** Heads of DOE offices with responsibility for specific DOE nuclear facilities. These include the Assistant Secretaries for Environment, Safety and Health; Conservation and Renewable Energy; Defense Programs; Fossil Energy; Environmental Restoration and Waste Management, and the Directors of Nuclear Energy, Energy Research, Civilian Radioactive Waste Management, and Environmental Restoration and Waste Management.
- 2. CO-LOCATED WORKER.** Co-located facility workers are those that do not have "hands-on" activities (e.g., administrative workers).
- 3. DEFECTIVE ITEM, MATERIAL, OR SERVICE.** Any item, material, or service which potentially or actually does not meet a national consensus standard for such item, material, or service or is a copy or modification of an item, material or service that does not meet such standard without the authority or right to do so. Definitions of defective fasteners (including the Suspect/Counterfeit Headmark List) and molded case circuit breakers contained in the "Environmental, Safety, and Health Bulletin, DOE/EH/-0266, Issue No. 92-4, August 1992" or subsequent bulletins on similar topics are incorporated into this definition by reference.

4. **DOE ACTIVITY.** An activity taken for or by DOE that has the potential to result in the occupational exposure of an individual to radiation or radioactive material and hazardous substances or materials. The activity may be, but is not limited to, design, construction, operation, or decommissioning. To the extent appropriate, the activity may involve a single DOE facility or operation, or a combination of facilities and operations, possibly including an entire site. (G-10 CFR 835/B1 - Rev. 1)
5. **FEDERALLY PERMITTED RELEASE.** Any release that satisfies the definition of "Federally Permitted Release" in 40 CFR 302.3.
6. **HAZARDOUS SUBSTANCE OR MATERIAL**
 - (a) U.S. Department of Energy, Office of Safeguards and Security Hazardous Material. Any solid, liquid, or gaseous material that is chemically toxic, flammable, radioactive, or unstable upon prolonged storage, and that exists in quantities that could pose a threat to life, property, or the environment.
 - (b) U.S. Department of Transportation (DOT) Hazardous Materials (see 40 CFR 171.8 and 172.101). A substance or material, including a hazardous substance, which has been determined by the U.S. Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce and which has been so designated.
 - (c) U.S. Environmental Protection Agency (EPA) Hazardous Substances (see 40 CFR 302 and 117). For purposes of transportation, see 49 CFR 171.8 and 172.101.
 - (d) Environmental Protection Agency Hazardous Wastes (see 40 CFR 261 and 40 CFR 262). Any material that is subject to the Hazardous Waste Manifest Requirements of EPA. For purposes of transportation, see 49 CFR 171.8.
 - (e) Occupational Safety and Health Administration (OSHA) Hazardous Chemical (See 29 CFR 1910.1000 and 29 CFR 1910.1200). Any chemical which is a physical or a health hazard.
 - (f) Superfund Amendments and Reauthorization Act Extremely Hazardous Substances (see 40 CFR 355). These are not defined but appear on a list in Appendix A and Appendix B of 40 CFR 355.
7. **ITEM.**
 - (a) An all-inclusive term used in place of the following: appurtenance, sample, assembly, component, equipment, material, module, part, structure, subassembly, subsystem, system, unit, documented concepts, or data.
 - (b) When used in reference to nuclear material, a visible piece or container of nuclear material with a unique identification and known nuclear material mass.
8. **LESSONS LEARNED.** A "good work practice" or innovative approach that is identified and shared, or an adverse work practice or experience that is shared to avoid recurrence.
9. **LOST WORKDAYS.** The number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so; that is, could not perform all or any part of his or her normal assignment during all or any part of the workday or shift because of the occupational injury or illness.
10. **MEDICAL TREATMENT.** Includes treatment of injuries administered by physicians or registered professional personnel. Medical treatment does not include first-aid treatment (one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and so forth, which do not

ordinarily require medical care) even though provided by a physician or registered professional personnel.

11. **MEMBER OF THE PUBLIC.** Persons who are not occupationally associated with the LLNL facility or operations; e.g., persons whose assigned occupational duties do not require them to enter the Laboratory site.
12. **NONREACTOR NUCLEAR FACILITY.** Those activities or operations that involve radioactive and/or fissionable materials in such form and quantity that a significant nuclear hazard potentially exists to the employees or the general public. Included are activities or operations that: 1) produce, process, or store radioactive liquid or solid waste, fissionable materials, or tritium; 2) conduct separations operations; 3) conduct irradiated materials inspection, fuel fabrication, decontamination, or recovery operations; 4) conduct fuel enrichment operations; or 5) perform environmental remediation or waste management activities involving radioactive materials. Incidental use and generating of radioactive materials in a facility operation (e.g., check and calibration sources, use of radioactive sources in research and experimental and analytical laboratory activities, electron microscopes, and X-ray machines) would not ordinarily require the facility to be included in this definition. Accelerators and reactors and their operations are not included. The application of any rule to a nonreactor nuclear facility should be applied using a graded approach. The final determination of a facility as a nuclear facility shall be based on an approved Safety Analysis Report (SAR).
13. **NUCLEAR FACILITY.** Reactor and nonreactor nuclear facilities.
14. **OCCURRENCE.** An event or condition that adversely affects, or may adversely affect, DOE or contractor personnel, the public, property, the environment, or the DOE mission. Events or conditions meeting the criteria threshold identified in Attachment II are Occurrences.
15. **OCCURRENCE INVESTIGATION.** Investigations are to be conducted according to Chapter 4 of the *LLNL Health and Safety Manual*. When determined by DOE that a Type A or B investigation is required, DOE procedures shall be used.
16. **OFFSITE TRANSPORTATION EVENT.** Involves movement of materials which are considered to be in commerce, thus requiring compliance with DOT Hazardous Materials Regulations.
17. **OIL.** Oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.
18. **ONSITE TRANSPORTATION EVENT.** Movement of materials that are not in commerce and subject to DOE onsite procedures and safety requirements.
19. **PERFORMANCE DEGRADATION.** Failure or degradation of a facility, process, system, or component that reduces the reliability of critical components of the facility whose loss or degradation prevents the system from performing its intended function. Performance degradation does not include: (1) A burned-out power indicator light on a piece of radiation monitoring equipment which does not prevent the equipment from detecting elevated radiation levels and alarming as designed; (2) A piece of equipment that is determined to be out of calibration on the conservative side (such as a low-level alarm that alarms at a higher value than it should); or (3) the temporary loss of a component where identical redundant components are maintained in operation and the authorization basis is not compromised.
20. **PRIMARY ENVIRONMENTAL MONITORS.** Monitoring equipment required to legally monitor ongoing discharges. In general, this term applies to monitors closest to the point of discharge to determine if discharges are within specified limits. It also includes any equipment which actuates

automatically in response to set level signals from such a monitor. It does not include equipment in general area, remediation, or compliance monitoring programs.

21. **PROGRAM MANAGER.** DOE Headquarters individual or designee, designated by and under the direction of a Secretarial Officer, who is directly involved in the operation of facilities under his or her cognizance and holds signature authority to provide technical direction through Heads of Field Element/Operations Office Organizations to contractors to these facilities.
22. **PROGRAM SIGNIFICANT COST.** Meets the criteria of Group 7.A, Cost Basis Reporting.
23. **PROGRAM SIGNIFICANT DELAY.** Meets the criteria of Group 8, Facility Status.
24. **REACTOR.** Unless it is modified by words such as containment, vessel, or core, means the entire reactor facility, including the building/structure, equipment, and associated areas devoted to the operation and maintenance of one or more reactor cores. Any apparatus that is designed or used to sustain nuclear chain reactions in a controlled manner, including critical and pulsed assemblies and research, test, and power reactors, is defined as a reactor. All assemblies designed to perform sub-critical experiments which could potentially reach criticality are also to be considered reactors. Critical assemblies are special nuclear devices designed and used to sustain nuclear reactions. Critical assemblies may be subject to frequent core and lattice configuration change and may be used frequently as mockups of reactor configurations. Therefore, requirements for modification do not apply unless the overall assembly room is modified, a new assembly room is proposed, or a new configuration is not covered in previous safety evaluations (e.g., Safety Analysis Reports, Safety Analysis Report Addenda, or Technical Safety Requirements).
25. **RELEASE.** Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or otherwise disposing of hazardous substances or material into the environment. This includes abandoning/discarding any type of receptacle containing hazardous substances in an open containment structure but does not include permitted containment structures.
26. **REPORTABLE QUANTITY (RQ).** For any Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substance and radionuclide, the quantity established in 40 CFR Part 302, the release of which requires notification unless federally permitted.
27. **SAFETY CLASS STRUCTURES, SYSTEMS, OR COMPONENTS (SAFETY CLASS SSCs).** Nuclear facility systems, structures, or components, including primary environmental monitors and portions of process systems, whose failure could adversely affect the environment or safety and health of the public identified by safety analyses (DOE-STD-3009-94). Safety Class SSCs are defined in an approved SAR.
28. **SAFETY SIGNIFICANT STRUCTURES, SYSTEMS, OR COMPONENTS (SAFETY SIGNIFICANT SSCs).** Nuclear and non-nuclear facility structures, systems, or components not designated as Safety Class SSCs but whose preventative or mitigative function is a major contributor to defense in depth (e.g., prevention of uncontrolled material release) and/or worker safety as determined from hazard analysis (DOE-STD-3009-94). Safety Significant SSCs are defined in an approved SAR.

NOTE: Safety Significant SSC, as used in these procedures, distinguishes a specific category of SSCs other than Safety Class SSCs. It should not be confused with the generic modifier "safety significant" used in DOE Orders (e.g., DOE Order 5480.23).

29. **SECRETARIAL OFFICER.** For the purpose of these procedures, Heads of Headquarters Elements with responsibility for specific facilities. These include the Assistant Secretaries for

Energy; Efficiency and Renewable Energy; Environmental Management; Defense Programs; Fossil Energy; and the Directors of Energy Research; Civilian Radioactive Waste Management; and Nuclear Energy.

- 30. **SERVICE.** The performance of work, such as design, construction, fabrication, inspection, non-destructive examination/testing, environmental qualification, equipment qualification, repair, installation, or the like.
- 31. **SIGNIFICANT PERFORMANCE DEGRADATION.** A degradation with safety or environmental significance that compromises the facility minimum authorization bases for the operational condition at the time of the occurrence or allows an unmonitored release that is not immediately mitigated. Entering an approved Limiting Condition of Operation (LCO) Action Statement does not compromise the minimum authorization basis. A violation of the LCO Action Statement does constitute a significant performance degradation.
- 32. **SUBSTANTIAL SAFETY HAZARD.** A loss of safety function to the extent that there is a major reduction in the degree of protection provided to public or worker health and safety.
- 33. **SUPPLIER.** An organization furnishing items or services. An all-inclusive term used in place of any of the following: vendor, seller, contractor, subcontractor, fabricator, distributor, consultant, or sub-tier suppliers.
- 34. **TRANSPORTATION EVENT.** Any real-time occurrence involving any of the following transportation activities: material classification, packaging, marking, labeling, placarding, shipping paper preparation, loading/unloading, separation/segregation, blocking and bracing, routing, accident reporting, and movement of materials. Transportation events with injury(s) may also require reporting in accordance with Group 3 criteria.

SITE-SPECIFIC REPORTABLE OCCURRENCES BY GROUP

GROUP 1 FACILITY CONDITION

A. Nuclear Criticality Safety

Unusual	Violation of the double contingency criticality specifications, such that no valid controls are available to prevent a criticality accident.
Off-Normal	Any nuclear criticality safety noncompliance that results in a loss of contingency such that only one valid criticality control remains in place.

B. Fires/Explosions

Unusual	Any fire or explosion within primary confinement/containment boundaries of a nuclear facility.
Off-Normal	<p>(1) Any fire or explosion not required to be reported as an Unusual Occurrence that activates a fire suppression system (e.g., Halon discharge, sprinkler heads activating) or significantly disrupts normal facility operations, except under approved testing.</p> <p>(2) Any unplanned fire, within a facility, that takes longer than 10 minutes to extinguish following the arrival of fire protection personnel; this 10-minute time limit excludes fires that do not disrupt normal facility operations and that are in the initial or beginning stage that can be controlled or extinguished by portable fire extinguishers, standpipe, or small hose systems without the need for protective clothing or breathing apparatus.</p>

C. Safety Status Degradation

Unusual	<p>(1) Any violation or noncompliance of a Technical Safety Requirement (Technical Specification or Operational Safety Requirement) reviewed and formally approved in writing by LLNL and DOE/OAK.</p> <p>(2) Discovery of an incorrectly derived Technical Safety Requirement (Technical Specification or Operational Safety Requirement) that was reviewed and formally approved in writing by LLNL and DOE/OAK.</p> <p>(3) Any operation that is outside the authorization basis or the safety analysis of the facility or process.</p> <p>(4) Any occurrence that would prevent immediate facility or offsite emergency response capabilities.</p> <p>(5) Discovery of an Unreviewed Safety Question (USQ) which reveals a currently existing inadequacy in the approved authorization basis. An actual USQ is one requiring DOE approval.</p>
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Off-Normal	<p>(1) Discovery of a condition that leads LLNL to limit facility operations due to the identification of a potential degradation of the authorization basis of a facility or process. This includes the discovery of analytical errors, omissions, or inadequacies that present the potential for an Unreviewed Safety Question and that leads LLNL to limit facility operations to avert an adverse ES&H consequence affecting significant portions of a facility.</p> <p>(2) Discovery of a potential Unreviewed Safety Question that could affect the present or future operation of the facility. Routine USQ determinations due to planned system or operational modifications are not reportable under this criteria. USQs evaluated as negative and not requiring DOE approval are also not reportable under this criteria.</p>
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D. Loss of Control of Radioactive Material/Spread of Radioactive Contamination

NOTE: See Reference I for guidance and suggested statements to be used in completing an Occurrence Report involving area/facility contamination occurrences.

Unusual	<p>(1) Identification of radioactive contamination offsite in excess of 100 times the surface contamination levels specified in DOE Order 5400.5, Figure IV-1, that has not been previously identified and formally documented. For the first group listed in Figure IV-1 (i.e., transuranics), use the values specified in Table 1 (provided as Appendix B to this Manual) of the EH-412 memorandum "Application of DOE 5400.5 Requirements for Release and Control of Property Containing Residual Radioactive Material," dated November 17, 1995.</p> <p>(2) Loss of accountability of a sealed or unsealed radioactive source that exceeds 100 times the quantities specified in DOE N 441.1, RADIOLOGICAL PROTECTION FOR DOE ACTIVITIES.</p> <p>(3) Any fissile material in a process or non-process system outside primary confinement boundaries not designed or expected to accommodate such material.</p>
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Off-Normal	<p>(1) Any unplanned spill of liquids in excess of one (1) gallon, contaminated with radioactive material in concentrations greater than five times the DCG values listed in DOE Order 5400.5, Figure III-1.</p> <p>(2) Identification of radioactive contamination outside a Radiological Area (as defined in 10 CFR 835, Occupational Radiation Protection) established for contamination control but within a posted Controlled Area, in excess of 10 times the contamination levels in 10 CFR 835, Appendix D. For tritium, until a total contamination value is specified by 10 CFR 835 Appendix D, report contaminations in excess of $10 \times 10,000 \text{ dpm}/100 \text{ cm}^2$.</p> <p>Radiological Areas include any area posted with the radiation tri-foil symbol (e.g., Contamination Areas, High Contamination Areas, Airborne Activity Areas, Buffer Areas, and Radioactive Materials Areas). Controlled Areas are posted as "Access Control Areas."</p> <p>(3) Identification of radioactive contamination onsite that is not located within a Controlled Area, Fixed Contamination Area, or Soil Contamination Area and is in excess of two times the total contamination levels in 10 CFR 835, Occupational Radiation Protection, Appendix D. For tritium, until a total contamination value is specified by 10 CFR 835, Appendix D, report contaminations in excess of $2 \times 10,000 \text{ dpm}/100 \text{ cm}^2$.</p> <p>(4) Identification of radioactive contamination offsite in excess of the surface contamination levels specified in DOE Order 5400.5, Figure IV-1, that has not been previously identified and formally documented. For the first group listed in Figure IV-1 (i.e., transuranics), use the values specified in Table 1 (provided as Appendix B to this Manual) of the EH-412 memorandum "Application of DOE 5400.5 Requirements for Release and Control of Property Containing Residual Radioactive Material," dated November 17, 1995.</p> <p>(5) Loss of accountability of a sealed or unsealed radioactive source or identification of lost radioactive material that exceeds ten times and is less than 100 times the quantities specified in DOE N 441.1, RADIOLOGICAL PROTECTION FOR DOE ACTIVITIES.</p> <p>(6) Loss of accountability of a sealed or unsealed radioactive source or identification of lost radioactive material that is one to ten times the quantities specified in DOE N 441.1, RADIOLOGICAL PROTECTION FOR DOE ACTIVITIES.</p>
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E. Safety Structure, System, or Component (SSC) Degradation

(Refer to the definitions section in Attachment I)

Unusual	Performance degradation of any Safety Class SSC that prevents satisfactory performance of its design function when it is required to be operable or in operation.
Off-Normal	<p>(1) Performance degradation of any Safety Class SSC that prevents satisfactory performance of its design function when it is not required to be operable or in operation.</p> <p>(2) Performance degradation of any Safety Significant SSC that prevents satisfactory performance of its design function when it is required to be operable or in operation.</p>

F. Violation/Inadequate Procedures

Unusual	<p>(1) Maintenance performed on Safety Class SSC without meeting the required plant conditions for non-availability resulting in a significant performance degradation.</p> <p>(2) Incorrect maintenance (including calibration) on or unauthorized modifications to Safety Class SSC that was required to be operable or in operation and results in a significant performance degradation.</p>
Off-Normal	<p>(1) Any violation resulting in actual equipment damage in excess of \$10,000.</p> <p>(2) Use of inadequate procedures or deviation from written procedures that result in adverse effects on performance, safety, or reliability of Facility safety systems.</p> <p>(3) Incorrect maintenance (including calibration) on or unauthorized modifications to Safety Significant SSC required to be operational or in operation.</p>

G. Oversight Activities

Unusual	Any internal/external oversight activity discovering unsatisfactory operation, testing, maintenance, or modification of any Safety Class SSC that is required to be operable or in operation.
Off-Normal	Any internal/external oversight activity discovering unsatisfactory operation, testing, maintenance, or modification of any Safety Significant SSC required to be operable or in operation.

H. Operations

Unusual	<p>(1) Actuation of Safety Class SSC or their alarms resulting from an actual unsafe condition. Inadvertent alarms are not required to be reported unless an actuation of a Safety Class SSC occurs and the actuation is considered significant as defined by the approved facility procedures. Actuation of continuous air monitoring systems identified as Safety Class equipment do not have to be reported if their actuation was found to be due to radon-thoron effects on the system or their actuation is expected due to maintenance tasks and other planned operations in the facility where the potential for release of radioactivity is anticipated to occur and the workers are appropriately protected.</p> <p>(2) Loss of incoming alternating current power and a failure of the backup emergency power system, supplying power to Safety Class SSC required to be operable or in operation for the existing facility condition. Comment: if there are 2 EDGs and one fails, but the other worked, then it should be reportable as an OFF-NORMAL.</p> <p>(3) Weather conditions/natural phenomenon causing serious disruption of facility activities.</p> <p>(4) Loss of any process ventilation system serving a confinement function, which results in the loss of confinement and a release to the environment.</p> <p>(5) A facility evacuation (excluding office space) in response to an actual occurrence, not including a precautionary evacuation for an event that can be controlled and mitigated by employees or maintenance personnel assigned to the affected facility or activity.</p>
Off-Normal	<p>(1) Any unplanned and unexpected change in a process condition or variable adversely affecting safety, security, environment, or health protection performance sufficient to require termination of a procedure in a reactor or nonreactor nuclear facility.</p> <p>(2) Any unplanned electrical outages or unexpected consequences from a planned outage of at least 2 hours which seriously disrupt normal operations of a facility and/or may prevent the facility from meeting approved operating goals.</p> <p>(3) Any unplanned outages of service systems (i.e., cooling water, steam, phones, communication systems, etc.) or unexpected consequences from a planned outage which:</p> <ul style="list-style-type: none"> • Disrupt normal operations for one week or longer and • Adversely affect safety, security, environment or health protection performance. <p>(4) Loss of any process ventilation system for at least 2 hours serving a confinement function which does not result in the loss of confinement.</p> <p>(5) Actuation of Safety Significant SSC or their alarms resulting from an actual unsafe condition. Inadvertent alarms are not required to be reported. Actuation of continuous air monitoring systems identified as Safety Significant equipment does not have to be reported if: (a) their actuation was found to be due to radon-thoron effects on the system, or (b) their actuation is expected due to maintenance tasks and other planned operations in the facility where the potential for release of radioactivity is anticipated to occur and the workers are appropriately protected.</p>

GROUP 2 ENVIRONMENTAL

NOTE: In categorizing and reporting on environmental occurrences that involve enforcement actions related to violations of environmental requirements, the provisions of Reference H [see Paragraph 5 of the basic LLNL Implementing Procedures] must be incorporated in the written report submissions.

A. Radionuclide Releases

Unusual	<p>(1) Release of a radioactive material that is determined by a regulatory agency to have violated environmental requirements in Federal permits, Federal regulations, or requirements established under DOE directives.</p> <p>(2) Release below Emergency levels as defined in DOE Order 151.1 but which requires immediate (less than 4 hours) reporting to Federal regulatory authorities.</p>
Off-Normal	<p>(1) Any release of radioactive material to the environment that is not part of normal monitored release or not Federally permitted and exceeds 50% of a Comprehensive Environmental Response, Compensation, and Liability Act Reportable Quantity (CERCLA RQ) specified for such material per 40 CFR 302 within any 24-hour period.</p> <p>(2) Any controlled release of radionuclide material from a normally monitored operation that exceeds a regulatory requirement.</p> <p>(3) Any monitored facility or site boundary where exposure from or concentrations of radionuclides exceed a regulatory requirement.</p> <p>(4) Any detection of a radionuclide in a:</p> <ul style="list-style-type: none"> • Sanitary sewer system where the amount exceeds a regulatory limit and triggers a Notice of Violation (NOV) or • Storm sewer where the amount detected triggers a NOV or • Waste stream resulting from a process not involving radioactive material (e.g., nonhazardous waste, soil, scrap metal, etc.) which is confirmed to exceed DOE release limits or offsite facility acceptance criteria, and which was released offsite. <p>(5) Any controlled, uncontrolled, or accidental release which is not classified as an Unusual Occurrence but which will be reported in writing to state/local agencies in a format other than routine periodic reports called for by permits or other compliance agreements.</p>

B. Release of Hazardous Substances/Regulated Pollutants/Oil

Unusual	<p>(1) Release into the environment of hazardous substances or materials (identified in 49 CFR 172.101, 40 CFR 302, 40 CFR 117, 40 CFR 261, 40 CFR 355, or 29 CFR 1910.1000 or 1910.1200) that exceeds its CERCLA RQ per 40 CFR 302 or SARA RQs per 40 CFR 355 for extremely hazardous substances and results in enforcement action by the regulatory agency.</p> <p>(2) Any release that is not an Emergency as defined by DOE O 151.1, Comprehensive Emergency Management System, but which requires immediate (less than 4 hours) reporting to Federal regulatory agencies or triggers specification action levels for an outside Federal agency.</p> <p>(3) Any discharge of 100 gallons or more of oil of any kind or in any form into the environment, including, but not limited to, oil refuse, oil mixed with wastes other than dredged spoil, petroleum oil or derived products (e.g., transformer oil, lubricating oil, diesel fuel, gasoline, hydraulic fluid, etc.), and vegetable oil or products.</p>
Off-Normal	<p>(1) Release of a hazardous substance into the environment that is not part of a normal, monitored release and which exceeds 50% of a CERCLA RQ as specified for such material per 40 CFR 302.</p> <p>(2) Any discharge of greater than 42 gallons of oil of any kind or in any form into the environment, including, but not limited to, petroleum, fuel oil, oily sludge, oil refuse, and oil mixed with wastes (e.g., transformer oil, lubricating oil, diesel fuel, gasoline, hydraulic fluid, etc.), and vegetable oil or products.</p> <p>(3) Any detection of a hazardous substance in:</p> <ul style="list-style-type: none"> • The LLNL sanitary sewer system where the amount exceeds a regulatory limit and triggers an NOV, or • A storm sewer where the amount detected triggers an NOV, or • Hazardous material in a waste stream (e.g., nonhazardous waste, soil, scrap metal) which is confirmed to exceed offsite facility acceptance criteria, and was released to that facility, or which was improperly managed and posed a threat to environment, safety, or health. <p>(4) Any controlled, uncontrolled, or accidental release of a hazardous substance which is not classified as an Unusual Occurrence but which will be reported in writing to state/local agencies in a format other than routine reports called for by permit or other compliance agreements.</p> <p>(5) Any controlled release of a hazardous substance that occurs as a monitored part of normal operations which exceeds a regulatory limit.</p> <p>(6) Any general environmental monitoring where the concentration of a hazardous substance increases to a level which exceeds a regulatory limit.</p>

C. Discovery of Hazardous Material Contamination

Unusual	<p>(1) Discovery of hazardous substance contamination, onsite or offsite, in the environment (e.g., air, soil, water, groundwater) due to DOE/LLNL operations, which does not represent an immediate threat to the public, where the total weight of the contaminant found exceeds its reportable quantity per 40 CFR 302 or 40 CFR 355.</p> <p>(2) Any discovery of groundwater contamination due to DOE/LLNL operations that is not part of an existing contaminated area, groundwater plume, or from a previously identified source in either an annual report or in any CERCLA/Resource Conservation and Recovery Act (RCRA) activity, ongoing investigation or report.</p>
Off-Normal	Discovery of on-site hazardous substance or material (identified in 49 CFR 172.101, 40 CFR 302, 40 CFR 117, 40 CFR 261, 40 CFR 355, or 29 CFR 1910.1000 or 1910.1200) contamination in the environment (e.g., air, soil, water, groundwater) due to DOE/LLNL operations where the total weight of the contaminate found exceeds 50 percent of its reportable quantity per 40 CFR 302 or 40 CFR 355.

D. Ecological Resources

Unusual	Any occurrence involving a hazardous substance or material (identified in 49 CFR 172.101, 40 CFR 302, 40 CFR 117, 40 CFR 261, 40 CFR 355, or 29 CFR 1910.1000 or 1910.1200) causing significant impact to any identified ecological resource for which the DOE/LLNL is a trustee (e.g., damage to an identified historic/archeological site, damage to wetlands unless authorized by the appropriate agency, damage to endangered or threatened species critical habitat, etc.).
Off-Normal	NA

E. Environmental Agreement/Compliance Activities

Unusual	Any occurrence under any agreement or compliance area that requires notification of an outside regulatory agency within 4 hours or less and triggers an outside regulatory agency action level (e.g., requires a regulatory agency to respond to the incident [field response] to conduct an incident evaluation).
Off-Normal	<p>(1) Any agreement, compliance, remediation, or permit-mandated activity for which formal written notification (i.e., Notice of Violation Letter, Report of Violation, Notice of Deficiency [other than as part of a normal permit application process], Notice of Intent to Sue, and other types of enforcement actions) of enforcement has been received from the relevant regulatory agency that a site/facility is considered to be in non-compliance with schedules, regulatory, or permit requirements.</p> <p>(2) Any occurrence under any agreement or compliance area that will be reported in writing to outside agencies in a format other than routine reports called for by permits or other compliance agreements.</p>

GROUP 3 PERSONNEL SAFETY**A. Occupational Illness/Injuries**

Unusual	<p>(1) Any occurrence due to DOE operations resulting in a fatality or terminal injury or illness.</p> <p>(2) Any one occurrence resulting in 3 or more lost workday cases as defined by 29 CFR 1904.12 and Office of Management and Budget (OMB) No. 1200-0029.</p> <p>(3) Any occurrence requiring in-patient hospitalization of 3 or more personnel or that has a high probability of (based on hazards or accident investigations) resulting in a permanent disability.</p> <p>(4) Personnel exposures to sufficient levels of hazardous substances or hazards that require the administration of medical treatment on the same workday as the exposure and are above limits (e.g., time-weighted average exposures in excess of Threshold Limit Values [TLVs] or Permissible Exposure Limits [PELs]) established by the Occupational Safety and Health Administration (OSHA) (refer to 29 CFR 1910, subpart z) or American Conference of Governmental Industrial Hygienists (ACGIH), whichever is lower. These should include:</p> <ul style="list-style-type: none"> (a) Noise (b) Non-ionizing radiation (c) Chemical agents (d) Physical agents (e) Biological Agents <p>(5) Exposures to an immediately dangerous to life and health (IDLH) (as defined by 29 CFR 1910.120) condition without both appropriate personal protective equipment and procedures in place.</p>
Off-Normal	<p>(1) Any occupational illness or injury that results in immediate in-patient hospitalization or scheduled admittance.</p> <p>(2) Series of occupational illnesses from one event involving 3 or more people where at least one is a lost workday case.</p> <p>(3) Personnel exposure in a single event to hazardous substances or hazards in excess of limits as established by OSHA (refer to 29 CFR 1910), or ACGIH, whichever is lower. These should include:</p> <ul style="list-style-type: none"> (a) Noise (b) Non-ionizing radiation (c) Chemical agents (d) Physical agents (e) Biological Agents

B. Vehicular Incidents

This section covers vehicular transportation incidents, including DOE or DOE contractor-operated aircraft. Group 6 should also be considered in categorization for reporting. Transportation incidents without injury (e.g., those involving hazardous or radioactive material or financial loss) must be reported per the requirements of Group 6 or Group 7.

Unusual	<p>(1) Any vehicular incident resulting in fatality(s), injury(s), or illness(es) classified under Group 3, Section A—Unusual Occurrence requirements.</p> <p>(2) Any vehicular incident involving DOE property with a fatality(s) to a person(s) other than DOE/LLNL personnel or DOE/LLNL contractor personnel.</p>
Off-Normal	<p>(1) Any vehicular incident with injury(s) involving DOE property resulting in a lost workday case.</p> <p>(2) Any vehicular incident involving DOE property with injury(s) to a person(s) other than DOE/LLNL personnel or DOE/LLNL contractor personnel.</p>

C. Safety Concerns

Unusual	Any hazardous material exposure resulting in adverse health effects or requiring medical treatment other than first aid at the Laboratory medical facility or any offsite hospital.
Off-Normal	<p>(1) Unauthorized use of flammable, toxic, explosive, corrosive, or other unsafe or dangerous processes, chemicals, materials, or methods not in accordance with standard operating procedures or work plans.</p> <p>(2) Any shutdown of a work activity taken as a result of an OSHA violation (e.g., trenching without adequate shoring or working at elevated levels without fall protection, when required).</p> <p>(3) Discovery of an activity or experiment which does not have a published and approved safety plan as called for in Supplement 2.02 of the <i>LLNL Health and Safety Manual</i>.</p>

GROUP 4 PERSONNEL RADIATION PROTECTION**A. Radiation Exposure**

Unless specified otherwise, all doses specified in the following requirements are calculated as the sum of the committed effective dose equivalent due to radionuclides taken into the body (internal exposure) and the dose equivalent due to external exposure.

Unusual	Determination of a dose that exceeds the limits specified in 10 CFR 835.202, (for onsite exposure) or DOE Order 5400.5, Chapter II, Section 1 (for offsite exposures to a member of the public).
Off-Normal	<p>(1) Any single occupational dose that exceeds an expected dose by 100 mrem.</p> <p>(2) A single, unplanned exposure onsite to a minor or member of the public that exceeds 50 mrem.</p> <p>(3) Determination of a dose that exceeds the reporting requirement thresholds specified in DOE Order 5400.5, Chapter II, Section 7, for offsite exposures to a member of the public.</p>

B. Personnel Contamination

Unusual	<p>(1) Any single occurrence resulting in the contamination of 5 or more personnel or their clothing (excluding protective clothing) measured (prior to washing or decontamination) at a level exceeding the values for total contamination limits identified in Appendix D of the <i>LLNL Health and Safety Manual</i>, Supplement 33.02. The contamination level shall be based on direct measurement and not averaged over 100 cm² as stated in footnote 3 of Appendix D. For tritium, until a total contamination value is specified by 10 CFR 835 Appendix D, report contaminations exceeding 10,000 dpm/100 cm².</p> <p>(2) Any occurrence requiring offsite medical assistance for contaminated personnel.</p> <p>(3) Identification of personnel or clothing contamination offsite due to DOE operations in accordance with approved radiological procedures for determining personnel and/or clothing contamination, measured (prior to washing or decontamination) at a level exceeding Appendix D of the <i>LLNL Health and Safety Manual</i>, Supplement 33.02.</p>
Off-Normal	<p>(1) Any measurement of personnel or clothing contamination (excluding protective clothing) measured at a level equal to or exceeding 5 times the total contamination limit identified in Appendix D of the <i>LLNL Health and Safety Manual</i>, Supplement 33.02, which is not properly identified and controlled prior to the individual leaving the room. The contamination level shall be based upon direct measurement and not averaged over 100 cm² as stated in footnote 3 of Appendix D. For tritium, until a total contamination value is specified by 10 CFR 835, Appendix D, report contaminations at a level equal to or exceeding 5 X 10,000 dpm/100 cm².</p> <p>(2) Any measurement of personnel or clothing contamination (excluding protective clothing) at a level exceeding but less than 5 times the total contamination limits identified in Appendix D of the <i>LLNL Health and Safety Manual</i>, Supplement 33.02, which is not properly identified and controlled prior to the individual leaving the room. The contamination level shall be based upon direct measurement and not averaged over 100 cm² as stated in footnote 3 of Appendix D. For tritium, until a total contamination value is specified by 10 CFR 835 Appendix D, report contaminations greater than 10,000 dpm but less than 5 X 10,000 dpm/100 cm².</p>

GROUP 5 SAFEGUARDS AND SECURITY

Occurrences in this section will require consideration of classification in addition to careful review for privacy considerations. Classified information will only be transmitted through approved communications channels. The lack of detail which may be required in such reports is recognized by DOE management.

A. Criminal Acts

Events in this section that are under criminal investigation are not considered discovered for categorization as reportable occurrences until, at minimum, a preliminary investigation is conducted and it is determined that a criminal event has actually occurred. Once an event is categorized as reportable, initial notification shall follow normal occurrence reporting timelines unless such notification would jeopardize an ongoing investigation. Full reporting may be delayed until completion of criminal investigations, if such reporting would jeopardize the investigation.

Unusual	<p>(1) At DOE reactor or nonreactor nuclear facilities:</p> <ul style="list-style-type: none"> (a) Bomb-related incidents, including location of a suspicious device, defined as a device which, according to local resources or expert evaluators, cannot be identified as nonexplosive and nonincendiary and, as a consequence, is disposed of or destroyed, or a noncredible bomb threat; (b) A noncredible terrorist threat; or (c) A noncredible sabotage threat or breach/attempted breach of a secure/classified facility. <p>(2) Violent assault/battery, murder, or unjustified use of deadly force while on DOE property.</p> <p>(3) Theft/diversion/intentional destruction of government property valued greater than \$1,000,000.</p> <p>(4) Racketeering or other organized criminal activity onsite.</p>
Off-Normal	<p>(1) Occurrences at LLNL facilities other than reactors and nonreactor nuclear facilities regarding a:</p> <ul style="list-style-type: none"> (a) Location of a suspicious device, defined as a device which, according to local resources or expert evaluators, cannot be identified as nonexplosive and nonincendiary and, as a consequence, is disposed of or destroyed; (b) Noncredible terrorist threat; or (c) Noncredible sabotage threat. <p>(2) Theft/diversion/intentional destruction of government property valued between \$10,000 and \$1,000,000.</p> <p>(3) Onsite felony conspiracies (i.e., blackmail, fraud, embezzlement, extortion and forgery) not involving classified information.</p>

B. Unaccounted for Classified Matter or Compromised Information

Unusual	<p>(1) The loss, potential compromise, or unauthorized disclosure, in any manner, of information classified as, or which should have properly been classified as, Top Secret (all categories) and Secret (all categories), and/or all documents regardless of classification level and category containing Sensitive Compartmented Information, Special Access Program information, and/or classified information of another government agency or foreign government.</p> <p>“Potential” compromises are defined as situations where classified information may have been faxed, discussed over the telephone, or e-mailed offsite. “Potential” compromises are also defined as situations where there is evidence information or matter was made available to unauthorized parties.</p>
Off-Normal	<p>(1) The loss, potential compromise, or unauthorized disclosure, in any manner, of information classified as, or which should have properly been classified as, Confidential (all categories) but not including Confidential documents containing Sensitive Compartmented Information, Special Access Program information, and/or classified information of another government agency or foreign government.</p> <p>“Potential” compromises are defined as situations where classified information may have been faxed, discussed over the telephone, or e-mailed offsite. “Potential” compromises are also defined as situations where there is evidence information or matter was made available to unauthorized parties.</p>

C. Substance Abuse

Unusual	
Off-Normal	<p>(1) Discovery of the prohibited use, possession, or involvement of alcohol or illegal drugs by personnel within a facility that may affect facility operations.</p> <p>(2) Any reportable occurrence under this Implementary Procedure at least partially attributable to the use of alcohol or illegal drugs.</p> <p>(3) A detection of personnel not fit for duty attributable to the use of alcohol or illegal drugs.</p>

D. Intelligence Activities

Unusual	<p>(1) Extortion/blackmail directed at DOE or DOE contractor personnel with intent of obtaining classified information/systems or detailed information concerning plant processes/configurations, or aiding in sabotage or terrorist acts.</p> <p>(2) Espionage, intelligence activities, treason, or subversive activities by or directed at DOE or DOE contractor personnel.</p>
Off-Normal	<p>(1) When illegal or unauthorized access is sought to classified or sensitive information, technology, or special nuclear materials.</p> <p>(2) When DOE or DOE contractor personnel believe that they may be the target of an attempted exploitation by an inimical interest, foreign or domestic.</p>

E. Physical Security System Computer

Unusual	<p>(1) Actual/attempted unauthorized access to classified or sensitive unclassified information.</p> <p>(2) Discovery of a computer incident (virus, hacker, sniffer, abuse, fraud, etc.) involving a physical security system that causes an alteration to a security features, disruption of service, or loss of the confidentiality, integrity or availability of information, and results in an estimated \$1,000,000 or more in damages or the cost of restoring services.</p>
Off-Normal	Discovery of a computer incident (virus, hacker, sniffer, abuse, fraud, etc.) involving a physical security system that causes an alteration to a security feature, disruption of service, or loss of the confidentiality, integrity or availability of information, and results in an estimated \$10,000 or more in damages or the cost of restoring services.

F. Unplanned/Unscheduled Outage of Site Security System

Unusual	<p>(1) The failure of all SILAS systems, including all Superblock, SCIF, and Exclusion Area RTUs, and the deployment of additional Protective Force Division (PFD) personnel as a compensatory measure.</p> <p>(2) The failure of the CAS, SAS, and simultaneous failure of the Superblock PIDAS Alarm Monitor (PAM) System.</p> <p>(3) The failure/loss of both radio base stations simultaneously combined with the outages of a significant number of the assigned field units with the Superblock.</p>
Off-Normal	The failure/loss of a significant number of CAIN booths in the nonsecure mode which requires the Protective Force either to lock out the booths or remain present in lieu of the booths as a compensatory measure. This does not include stationing security forces as an identified backup security system in a DOE-approved facility security plan.

G. Demonstrations/Protests

Unusual	<p>(1) Disruptive activities that impede vehicular or employee access/egress.</p> <p>(2) Attempted or actual trespass.</p> <p>(3) Malevolent activities that cause property damage or bodily harm.</p>
Off-Normal	Lawful activities that warrant deployment of additional protective measures.

H. Firearms

Unusual	Unauthorized firearms discharge resulting in personnel injury.
Off-Normal	<p>(1) Unauthorized firearms discharge resulting in no personnel injury.</p> <p>(2) Loss or theft of DOE firearms or munitions, as per DOE 5632.7A, Protective Force Programs. Amounts are as specified in the current edition of DOE 5632.7A.</p>

I. Other Security Concerns

Unusual	Unauthorized use, possession, or alteration of a security badge, credential, shield, or other form of official identification (to include blank badge stock/form) to gain access to a protected area or limited area.
Off-Normal	<p>(1) Discovery of prohibited items within a protected area that are suspected of being positioned for the purpose of aiding and abetting a malevolent act, or are, of themselves, illegal. Items discovered outside controlled areas that are legal under federal, state, and local laws are not reportable, even if the discovery of such items would otherwise be reportable under this paragraph.</p> <p>(2) Onsite death of a cleared DOE or DOE contractor personnel by unnatural causes (e.g., suicide, drug overdose).</p> <p>(3) Loss of security badges in excess of 5 percent in a calendar year.</p> <p>(4) Onsite malicious mischief, disorderly conduct, or vandalism which disrupts plant activity or causes damage between \$10,000 and \$100,000.</p>

J. Material Control and Accountability

Unusual	<p>(1) Loss or apparent loss of the following (including item losses due to shipper-receiver differences):</p> <ul style="list-style-type: none"> (a) One or more items for which the items total a Category I, II, or III quantity of special nuclear materials, or (b) One or more items of tritium in a weapons or test component, or (c) One or more items which total 50 grams or more of tritium. <p>(2) An inventory difference (loss or gain) that exceeds alarm limits does not involve the loss of an item, and is greater than a Category I or II quantity of special nuclear materials (SNM).</p> <p>(3) A shipper-receiver difference involving a gain in the number of items for which the items total to a Category I or II quantity of special nuclear materials (SNM).</p> <p>(4) Evidence that special nuclear material balance or tritium material balance data has been manipulated or falsified to mask a diversion or theft or to alter loss detection sensitivity.</p> <p>(5) Alarms or other indicators, excluding inventory differences or shipper-receiver differences, from loss detection elements for Category I and II material balance areas (MBAs) that cannot be proven to be false within 24 hours.</p> <p>(6) Loss or apparent loss whenever a state, local government or other federal agency must be notified.</p>
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Off-Normal	<p>(1) Alarms or other indicators, excluding inventory differences or shipper-receiver differences, from loss detection elements for Category III and IV material balance areas (MBAs) that cannot be proven to be false within 24 hours.</p> <p>(2) A special nuclear materials (SNM) or tritium inventory difference (loss or gain) that exceeds the alarm limits, does not involve the loss of an item, and is less than a Category III or IV quantity of material.</p> <p>(3) A shipper-receiver difference that exceeds 200 grams of fissile material and the combined limit of error for the shipment.</p> <p>(4) A special nuclear materials (SNM) or tritium shipper-receiver difference involving a gain in the number of items for which the items total less than a Category III or IV quantity of material.</p> <p>(5) Any unexpected accumulation of fissile material within primary confinement boundaries.</p> <p>(6) A statistically significant trend in total inventory difference for special nuclear materials (SNM) or tritium inventories.</p> <p>(7) Loss or apparent loss of one or more items for which the items total a Category IV quantity of special nuclear materials (SNM) or any loss of one or more containers of tritium that does not meet the threshold for an Unusual Occurrence (includes item losses due to shipper-receiver differences).</p>
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GROUP 6 TRANSPORTATION

Transportation occurrences in this section are incidents related to the transportation of DOE/LLNL materials by vehicular, vessel, air, or rail mode. The requirements for reporting noncompliance events and violations associated with such transfers are qualified in these procedures.

The federal regulations for offsite transportation are found in 10 CFR Part 71, 49 CFR Parts 106-180, 200-250, and 350-399; 46 CFR (vessel); ICAO/IATA; IMDG; 14 CFR (aviation); and several DOE Orders. For onsite (within controlled boundaries of LLNL facilities), the transportation regulations for hazardous materials transfers are defined in the LLNL *Onsite Hazardous Materials Packaging and Transportation Safety Manual* (UCRL-MA-108269). The requirements for reporting onsite noncompliances and violations associated with such transfers are qualified in these procedures in Section B, Onsite Transportation (DOE Jurisdiction) Occurrences.

Shippers are responsible for occurrences involving their shipments. LLNL facilities receiving materials from a DOE shipper that are not in compliance with appropriate regulations, as qualified by this Manual, and after review for concurrence by the LLNL Traffic Office, must report the discrepancies to the DOE shipper who will prepare an Occurrence Report and implement suitable corrective actions. If such a shipment is received from a non-DOE shipper and meets the reporting criteria of this Manual, the LLNL receiving organization will notify the LLNL Traffic Office for concurrence of the violation, who will then notify the non-DOE shipper of the apparent noncompliance. These reporting criteria are in addition to any required by DOT for LLNL transportation activities subject to applicable DOT regulations.

The term "limited quantity" as used in this Group is defined in 49 CFR 171.8.

A. Offsite Transportation (DOT jurisdiction) Occurrences.

Unusual	<p>(1) Any packaging or transportation activity in support of DOE/LLNL operations (including loading, unloading, or temporary storage) involving the offsite release of a radioactive material, etiologic agents, a reportable quantity of hazardous substance, or marine pollutants.</p> <p>(2) Any shipment of radioactive material that arrives at its destination with the external radiation levels or external surface contamination levels in excess of Department of Transportation (DOE) allowable limits as specified in 49 CFR 173, Subpart I, Class 7 (radioactive) materials, Sections 173.401-173.476 or results in personnel radiation exposure higher than permitted in federal regulations.</p> <p>(3) Any shipment of radioactive material or hazardous material that arrives at its destination with a nonreconcilable shipping paper discrepancy related to material quantity or unaccounted for package (e.g., actual number of packages inconsistent with number indicated on shipping papers), or waste manifest, or transfer authorization.</p> <p>(4) A vehicle, vessel, rail or air incident or accident (without personal injury) that presents significant impact on ability of facility to conduct transportation operations and:</p> <ul style="list-style-type: none"> (a) Results in release of radioactive or hazardous materials above federal regulatory limits in 49 CFR 172.101, Appendix A, Tables 1 and 2. (b) Involves performance degradation of safety equipment; or (c) Is the result of failure or degradation of administrative controls required to ensure safety. <p>(5) Any violation of applicable DOT Federal Motor Carrier Safety Regulations contributing to a transportation event involving a release of hazardous material listed in 49 CFR 172.101, Appendix A, Tables 1 and 2. (including mixtures or solutions containing listed material) if those violations are determined by DOT inspection and result in a fine (monetary penalty).</p>
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Off-Normal	<p>(1) Any packaging or transportation activity involving:</p> <ul style="list-style-type: none"> (a) An offsite transportation event involving a release of hazardous material listed in 49 CFR 172.101, Appendix A, Tables 1 and 2. (including mixtures or solutions containing listed material) transported in support of DOE operations. <p><u>NOTE:</u> If there is no limited quantity specified for that particular chemical in 49 CFR 173, this occurrence criteria does not apply to the hazardous material.</p> <ul style="list-style-type: none"> (b) See Group 6 (B) Onsite Transportation. <p>(2) A vehicle, vessel, rail or air incident or accident (without personal injury) that affects the ability of a facility to conduct transportation operations and:</p> <ul style="list-style-type: none"> (a) Results in the offsite release of radioactive or hazardous materials below limits established by Federal permits, Federal regulations, or DOE Standard limits but must be reported to State or local agencies; or (b) Is the result of operational procedural violations, including maintenance or administrative procedures. <p>(3) Violations of applicable DOT Hazardous Materials Regulations determined by DOT inspection involving:</p> <ul style="list-style-type: none"> (a) Errors made by the shipper in materials description, marking, labeling, or placarding (e.g. improper classification of hazardous materials); (b) An unqualified person signing shipping; (c) The highway routing selection requirements for highway route controlled shipments or the notification requirements for spent-fuel shipments not being observed; (d) The separation and segregation tables for hazardous materials not strictly adhered to; (e) The applicable packaging requirements for the assembly, handling, or selection of a package not being in accordance with the applicable regulations.
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	<p>(4) Any violation of applicable DOT Federal Motor Carrier Safety Regulations occurring offsite involving:</p> <ul style="list-style-type: none"> (a) A contractor driver operating a DOE-owned motor vehicle after a positive drug test or failure of an alcohol test; (b) An unqualified driver (medical, driver's license, or training not in compliance) operating a vehicle; (c) The carrier (contractor management) not having required insurance; (d) A vehicle that failed inspection not being removed from service; (e) A specification cargo tank with expired inspection being in service with hazardous materials; (f) A driver's log book deliberately misrepresented; or (g) Failure by LLNL to perform random or periodic drug or substance-abuse testing. <p>(5) Any violation of the Hazardous Material Regulations or Federal Motor Carrier Safety Regulations if that violation is determined by DOT inspection and does not result in a penalty.</p>
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B. On-site Transportation (non-DOT jurisdiction) Occurrences

For on-site transportation events the approved Facility Transportation Safety Document is the LLNL Onsite Hazardous Materials Packaging and Transportation Safety Manual (UCRL-MA-108269).

Unusual	<p>(1) An on-site transportation event involving the release of a hazardous substance listed in 49 CFR 172.101, "Hazardous Material Table", or the Appendix to 49 CFR 172.101 (including mixtures or solutions containing listed material), which is transported in support of DOE operations where the amount of material released exceeds its reportable quantity as identified in Table 1 or Table 2 of the Appendix to 49 CFR 172.101.</p> <p>(2) An on-site transportation event involving the release of radioactive material greater than an accepted quantity specified in 49 CFR 173.421-1(a) transported in support of DOE operations.</p> <p>(3) An on-site transportation event involving the release of hazardous material listed in 49 CFR 172.101, "Hazardous Material Table", or the Appendix to 49 CFR 172.101 (Including mixtures or solutions containing listed material), other than radioactive material, transported in support of DOE operations where the amount released exceeds the limited quantity specified for that particular Class, Division, and Packing Group in 49 CFR 173. (See column 8A in the Hazardous Material Table in 49 CFR 172.101 for the appropriate section reference in 49 CFR 173 to obtain the limited quantity values.)</p> <p>NOTE: If there is no limited quantity specified for that particular chemical in 49 CFR 173, this occurrence criteria does not apply to the hazardous material.</p>
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Off-Normal	<p>(1) An on-site transportation event involving a release of hazardous material listed in 49 CFR 172.101, "Hazardous Material Table", or the Appendix to 49 CFR 172.101 (including mixtures or solutions containing listed material), other than radioactive material, transported in support of DOE operations, where the amount released does not exceed the limited quantity specified for that particular Class, Division, and Packing Group in 49 CFR 173. (See column 8A in the Hazardous Material Table in 49 CFR 172.101 for the appropriate section reference in 49 CFR 173 to obtain the limited quantity values.)</p> <p>NOTE: If there is no limited quantity specified for that particular chemical in 49 CFR 173, this occurrence criteria does not apply to the hazardous material.</p> <p>(2) An on-site transportation event involving the release of radioactive material not exceeding an excepted quantity specified in 49 CFR 173.421-1(a) transported in support of DOE operations.</p> <p>(3) Any other violation of the LLNL On-site Hazardous Materials Packaging and Transportation Safety Manual requirements involving improper material descriptions, marking, labeling, placarding, routing, or separation/segregation of hazardous materials that could result in:</p> <ul style="list-style-type: none"> (a) improper handling/storage; (b) personnel exposures higher than permitted; or, (b) emergency response actions inconsistent with the actual hazard. <p>(4) Any transportation event involving DOE property resulting in vehicular damage of more than \$5,000 or, for insurance purposes, considered a total loss. To be reported under Group 7, Value Basis Reporting.</p>
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GROUP 7 VALUE BASIS REPORTING

Value basis reporting includes items based on cost or the identification of defective items, materials, or services. A defective item, material, or service (see Attachment I Definitions section) shall be identified and reported. This allows for investigation of the defect and to initiate actions to eliminate common mode failures due to substandard, counterfeit, misrepresentation, or fraudulent practices of suppliers.

A. Any occurrence specifying cost as a basis for reporting, unless otherwise stated, will be classified by the following monetary values necessary to repair, replace, or otherwise restore a facility/system/component to acceptable operation. Costs used for reporting should be reasonable initial estimates.

Unusual	Estimated loss or damage to DOE or other property amounting to \$1,000,000 or more, or estimated costs of \$1,000,000 or more required for cleaning (including decontamination), renovating, replacing, or rehabilitating structures, equipment, or property.
Off-Normal	Estimated loss or damage to Department of Energy or other property amounting to between \$10,000 and \$1,000,000 (for vehicle/aircraft the lower limit is \$5,000 or, for insurance purposes, considered a total loss) or estimated costs within these limits required for cleaning (including decontamination), renovating, replacing, or rehabilitating structures, equipment, or property.

B. Defective Item, Material, or Service

Unusual	NA
Off-Normal	<p>(1) Discovery of any defective item, material, or service, including any suspect, counterfeit, or substandard product, in any application whose failure could result in a substantial safety hazard. Examples include the identification of counterfeit components found in:</p> <ul style="list-style-type: none"> (a) Cranes, elevators, and fork lifts — items used in the critical load bearing path of such handling and lifting equipment; (b) Aircraft — items used in engines or to attach engines, wings, tails, or landing gear; (c) Vehicles —items used in engines, brakes, or steering mechanisms; (d) Critical components used in personnel safety equipment; (e) Facilities; <p>(1) Items used to contain:</p> <ul style="list-style-type: none"> a. Radioactive fluids, b. High-temperature or-pressure steam or fluids, or c. Other hazardous material <p>(2) Safety Class SSC or Safety Significant SSC supporting the safe operation or shutdown of a facility, system, or process that could result in a performance degradation.</p> <p>(f) Discovery of counterfeit bolts or parts.</p> <p>Identical items, materials, or services may be documented in a Roll-Up Report. Guidance in the identification and follow-up actions are contained in the <i>LLNL Health and Safety Manual</i>, Chapter 2, Supplement 2.05, Suspect/Counterfeit Materials and Environment, Safety and Health Bulletin, DOE/EH-0266, Issue No. 92-4, DOE Quality Alert, August 1992, or subsequent bulletins on similar topics.</p> <p>(2) Discovery of any actual defective item, material, or service, including any suspect, counterfeit, or substandard product, located in a Safety Class or Safety Significant SSC, in any application whose failure could not result in a substantial safety hazard. This does not include office supplies, equipment, or household products.</p>

GROUP 8 FACILITY STATUS

This section involves the change of facility status that may affect the performance goals of a facility. The potential inability to meet performance goals may significantly affect other major and minor facilities throughout the complex. Performance goals are operating objectives necessary to accomplish an approved facility, process, activity, or mission.

A. Facility/Process/Activity Unscheduled Shutdown

Unusual	NA
Off-Normal	Any unscheduled shutdown of a facility, process, or activity that resulted or may result in the failure to meet approved performance goals.

B. Existing Facility/Process/Activity Shutdown Extension

Unusual	NA
Off-Normal	Any increase in an approved shutdown schedule of 1 month or greater that resulted or may result in the failure to meet approved performance goals for an existing facility, process, or activity.

C. New Facility/Process/Activity Start-up Delay

Unusual	NA
Off-Normal	Any delay in an approved start-up schedule of 1 month or greater which resulted or may result in the failure to meet approved performance goals or a new facility, process, or activity.

GROUP 9 NUCLEAR EXPLOSIVE SAFETY (SEE DOE ORDER 5610.11)

A. Occurrences directly related to the Nuclear Explosive Weapons Safety efforts in support of Defense Programs. Any nuclear explosive occurrence at DOE-owned or-operated facilities or during onsite or offsite nuclear explosive transportation.

Unusual	(1) Inadvertent co-location of a live pit and live main charge high explosives. (2) The attempted delivery or inadvertent receipt of a nuclear explosive at LLNL (regardless of marking/description). (3) Mismarking /misidentification or inadvertent substitution of a nuclear explosive-like assembly or other assembly that impacts, or could impact nuclear safety (4) Immediate temporary removal from the work area due to irrational or erratic behavior during an operation that is subject to Nuclear Explosives Safety controls.
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Off-Normal	<p>(1) Mismarking /misidentification of a NELA (or other assembly) that does not impact nuclear safety.</p> <p>(2) A violation of the two-person concept during an operation that is subject to Nuclear Explosives Safety control.</p> <p>(3) Revocation of the Personnel Assurance Program (PAP) certification of an individual due to unusual behavior or circumstances that have not impacted operations that are subject to Nuclear Explosives Safety control.</p> <p>(4) The use of uncertified personnel or unauthorized equipment/tooling during an operation that is subject to Nuclear Explosives Safety control.</p>
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GROUP 10 CROSS-CATEGORY ITEMS**A. Collectively Significant Related Occurrences**

Unusual	A series of related occurrences which individually do not warrant reporting under preceding criteria, but which collectively are considered significant enough to warrant reporting as determined by the Facility Manager.
Off-Normal	A series of related occurrences which individually do not warrant reporting under preceding criteria, but which collectively are considered significant enough to warrant reporting as determined by the Facility Manager.

B. Near Miss Occurrences

Unusual	A near miss to one of the reporting classifications under preceding categories where the conditions necessary to cause an Unusual Occurrence existed (i.e., all barriers to event initiation were compromised).
Off-Normal	<p>(1) A near-miss to one of the reporting classifications under preceding categories where the conditions necessary to cause an Off-Normal Occurrence existed (i.e., all barriers to event initiation were compromised).</p> <p>(2) A near-miss to one of the reporting classifications under the preceding categories where the conditions necessary to cause an Off-Normal Occurrence were prevented from existing by one remaining barrier after other barriers had been compromised (e.g., one additional independent failure/degradation was necessary for event initiation to be possible).</p>

C. Potential Concerns/Issues

Unusual	(1) An occurrence that may result in a significant concern, particularly in the off-site transportation and radiological areas, by the press or general population or could damage the credibility of the Department. (2) Other events determined by the Facility Manager.
Off-Normal	(1) Any event resulting in the initiation of a Type A or a Type B investigation as categorized by DOE O 225.1, ACCIDENT INVESTIGATIONS. (2) Other events determined by the Facility Manager.

INSTRUCTIONS FOR COMPLETING AN OCCURRENCE REPORT

GENERAL

The following instructions apply to the reporting of occurrences via hardcopy or the electronic database, the Occurrence Reporting and Processing System (ORPS). All reports containing classified information shall be submitted in hardcopy in accordance with established security requirements.

The numbers on the specific report items correspond with the numbers in the Occurrence Report format. All fields with an asterisk (*) preceding them are required for all (Notification, Update, and Final) reports. Fields marked with a pound sign (#) are required under certain conditions, for example, depending on occurrence type, report type, or the answer to a previous question.

Items 1 through 19 and Item 25 of the Occurrence Report are required for the Notification Report. Data may be entered in the other fields as appropriate. For the Update Report and Final Reports, information on the Notification Report shall be retained and updated as better information becomes available. The DOE Facility Representative and Program Manager may provide comments in Items 34 and 35, respectively, for all reports.

Occurrences reported per Attachment II under Group 1 (Facility Condition) and Group 4 (Personnel Radiation Protection) are of special significance to nuclear safety. Therefore, Final Reports for occurrences at nuclear facilities within these groups shall contain a thorough narrative discussion of all the items listed below and, in particular, Item 27.

Refer to Paragraph 8.G. of these procedures for the requirements and proper format when submitting Roll-up Reports.

Occurrence Report Items

A. Facility/Personnel Information

- (1) *Facility Function. Enter the type of facility or the activity/function performed by the facility. Only one function can be selected. Possible entries are listed below.
 - (a) Plutonium processing and handling
 - (b) Special nuclear materials storage
 - (c) Explosive
 - (d) Uranium enrichment
 - (e) Uranium conversion/processing and handling
 - (f) Irradiated fissile material storage
 - (g) Reprocessing
 - (h) Nuclear waste operations
 - (i) Tritium activities
 - (j) Fusion activities
 - (k) Environmental restoration operations
 - (l) Category "A" reactors
 - (m) Category "B" reactors
 - (n) Solar activities
 - (o) Fossil and petroleum reserves
 - (p) Accelerators
 - (q) Balance-of-plant (e.g., offices, machine shops, site/outside utilities, safeguards/security, and transportation)
- (2) *Name of Laboratory Directorate/Organization. Enter the name of the laboratory and LLNL organization.
- (3) *Cognizant Associate Director/Designee. Enter the name, title, and telephone number of the Associate Director or designee who has direct line responsibility for operation of the facility. If

ORPS is being used, enter the name, title, and telephone number of the responsible Facility Manager or designee who approved this report, either by personally transmitting the electronic report or by signing the hardcopy report. **NOTE:** ORPS will not automatically enter the name of the Facility Manager in this field.

- (4) *Originator/Transmitter. Enter the name, title, and telephone number of the person who originated this report. This is the person who gathers the information and is most knowledgeable about the event. If ORPS is being used, the name of the transmitter will automatically be entered by the computer when the report is uploaded.
- (5) #Authorized Derivative Classifier. For facilities where classified operations are conducted and classified information is generated, mark the appropriate box and enter the name of the Authorized Derivative Classifier who determined that the report was unclassified and the date of the determination. The Authorized Derivative Classifier must also sign the form if the first statement is marked. If the report is from a designated unclassified subject area (DUSA) or contains administrative information only, mark the appropriate box and place initials next to the statement marked.

B. Specific Report Items.

- (1) *Occurrence Report Number. Enter an alphanumeric designation that identifies the DOE Field Office, area office (if applicable), DOE contractor or laboratory involved, facility, the calendar year of the occurrence, and sequential number of the occurrence by facility. If ORPS is being used, the Occurrence Report number will be automatically generated. Examples are

SAN--LLNL-LLNL-1995-0015 and AL--AO-MHSM-PANTEX-1995-0003.
- (2) *Report Type and Date. Check the block that identifies the type of Occurrence Report being submitted. Use an Update Report for recategorization of an occurrence. Possible entries are Notification Report, Update Report, or Final Report.
 - (a) Items 1 through 19 and Item 25 of the Occurrence Report are required for the Notification Report, which remains a part of subsequent Occurrence Reports.
 - (b) All dates and the time of the Notification Report submission are computer-generated. The date that the report is entered into the ORPS data base is the Occurrence Report's submission date.
 - (c) For hardcopy reports, show all dates. That is, for a Final Report, this block must show the submission dates of the Notification Report, latest Update Report, and Final Report.
 - (d) To cancel an Occurrence Report, check the block under Report Type for Final Report as well as the block for canceled under occurrence category (Item 3 below). Canceled reports must be finalized and go through the same approval process as all other Occurrence Reports; give an explanation for canceling the report in the Immediate Actions Taken and Results field (Item 19). Items 20 through 35 are not required fields for canceled reports and, once it is signed by the DOE Facility Representative and Program Manager, the Occurrence Report will be removed from the active data base.
- (3) *Occurrence Category. Indicate which category has been determined for the occurrence. Only one category can be selected. Possible entries are Emergency, Unusual, Off-Normal, Canceled.
- (4) *Number of Occurrences. Enter the number of occurrences included in this report. The number will always be one unless the occurrences meet the specific criteria for Roll-Up Reports for Off-Normal Occurrences, as discussed in Paragraph 8.G. of these procedures. If the occurrences meet those criteria, be sure to change this field each time additional occurrences are added.

#Original Occurrence Report. For Roll-Up Reports with an approved Final Report, enter the Occurrence Report number for the original occurrence that is on the ORPS data base as an approved Final Report.

- (5) *Division or Project. Identify in full the project or the LLNL organizational unit responsible for the facility at which the occurrence took place (e.g., division, program, department, etc.).
- (6) *DOE Secretarial Office. Identify the DOE Secretarial Office to which this facility is operationally responsible. Only one Secretarial Office can be selected. If the facility is operationally responsible to more than one Secretarial Office, enter the Secretarial Office that is most directly involved in the specific work activity during which the occurrence took place. Possible entries are listed below.

DP - Defense Programs
 EE - Energy Efficiency and Renewable Energy
 EH - Environment, Safety and Health
 EI - Energy Information Administration
 EM - Environmental Management
 ER - Energy Research
 FE - Fossil Energy
 HR - Human Resources and Administration
 NE - Nuclear Energy
 NN - Nonproliferation and National Security
 RW - Civilian Radioactive Waste Management

- (7) *System, Building, or Equipment. Identify the systems, equipment, or structural items involved in the occurrence, as applicable. In addition, in the case of component failures or defective parts or materials, provide such information as the manufacturer, model number, and size. The most significant item(s) should be listed here. Additional information can be provided in the Description of Occurrence (Item 16).
- (8) *Unclassified Controlled Nuclear Information. When required and when appropriate UCNI guidance is available, a reviewing official shall make a final determination that the report contains (enter "Y" for Yes) or does not contain (enter "N" for No) UCNI. Where appropriate UCNI guidance is not available, a Reviewing Official shall make a preliminary review determination that the report may contain UCNI (still enter "Y" for Yes) or does not contain (enter "N" for No) UCNI.
- (9) #Plant Area. Indicate the name of the site-specific plant area (e.g., F-Area, M-Area, Block 300) where the occurrence took place.
- (10) *Date and Time Occurrence Was Discovered. Enter the date and time when the facility staff discovered the event or condition being reported.
- (11) *Date and Time Occurrence Was Categorized. Enter the date and time the Facility Manager determined that the event or condition constituted a reportable occurrence and determined its category (Emergency, Unusual, or Off-Normal Occurrence).
- (12) #DOE Notification. Enter the name of the DOE Headquarters Coordinator and the date and time when the DOE HQ EOC was notified. This field is not required for occurrences that are categorized as off-normal.
- (13) #Other Notifications. Enter the name(s), organization(s), date(s), and notification time(s) of state and local officials or other agencies. Additional information can be provided in the Immediate Actions Taken and Results field (Item 19).
- (14) *Subject or Title of Occurrence. Enter a brief title or description (140 characters or less) of the nature, cause, and result of the occurrence. If the occurrence involved an Unreviewed Safety Question, the acronym "USQ" shall be placed at the end of the Subject or Title of Occurrence. If the report is a Roll-Up Report, include "Roll-Up" in the title.

- (15) *Nature of Occurrence. Enter the nature(s) of the occurrence as discussed in Attachment II of these procedures. As many as three selections can be made. Possible entries are listed below.

Group 1. Facility Condition

- (a) Nuclear Criticality Safety
- (b) Fires/Explosions
- (c) Safety Status Degradation
- (d) Loss of Control of Radioactive Material/Spread Contamination
- (e) Safety Structure/System/Component Degradation
- (f) Violation/Inadequate Procedures
- (g) Oversight Activities
- (h) Operations

Group 2. Environmental

- (a) Radionuclide Releases
- (b) Release of Hazardous Substances/Regulated Pollutants/Oil
- (c) Discovery of Hazardous Material Contamination
- (d) Ecological Resources
- (e) Environmental Agreement/Compliance Activities

Group 3. Personnel Safety

- (a) Occupational Illness/Injuries
- (b) Vehicular Incidents
- (c) Safety Concerns

Group 4. Personnel Radiological Protection

- (a) Radiation Exposure
- (b) Personnel Contamination

Group 5. Safeguards and Security

- (a) Criminal Acts
- (b) Unaccounted for Classified Matter/Compromised Information
- (c) Substance Abuse
- (d) Intelligence Activities
- (e) Physical Security System Computer
- (f) Unplanned/Unscheduled Outage of Site Security System
- (g) Demonstrations/Protests
- (h) Firearms
- (i) Other Security Concerns
- (j) Material Control and Accountability

Group 6. Transportation

Group 7. Value Basis Reporting

- (a) Cost Based Occurrences
- (b) Defective Item, Material, or Service

Group 8. Facility Status

- (a) Facility/Process/Activity Unscheduled Shutdown
- (b) Existing Facility/Process/Activity Shutdown Extension
- (c) New Facility/Process/Activity Start-up Delay

Group 9. Nuclear Explosive SafetyGroup 10. Cross-Category Items

- (a) Collectively Significant Related Occurrences
- (b) Near-Miss Occurrences
- (c) Potential Concerns/Issues

- (16) *Description of Occurrence. Enter a clear, concise, objective description of what happened and what was observed. To the maximum extent possible, a sequence of events should be provided. The type of information to be provided in the description includes all of, but is not limited to, the following:

- (a) The method of discovery
- (b) Any component failures and the failure modes
- (c) Any personnel errors involved, including the type and result of the error
- (d) Any procedure problem encountered
- (e) The response of any automatic or manual safety systems and the signals which initiated and terminated their operation
- (f) The duration of any failures
- (g) Operator actions that affected the course of events
- (h) The loss of any safety equipment
- (i) For contamination events, the information described in Paragraph C below

When appropriate for clarification, photos, sketches, or drawings should be attached. Other documents such as investigation reports, NOVs, environmental enforcement action, and formal root cause analysis reports should also be attached. If ORPS is used, all photos, sketches, or drawings should be referenced as attachments to the Occurrence Report, with specifics as to where or from whom they can be obtained.

Personnel preparing occurrence reports should, to the extent possible, avoid the use of plant-specific terms and acronyms. When used, such terms should be clearly defined.

- (17) *Operating Conditions of Facility at Time of Occurrence. Describe the operational status of the facility or equipment at the time of the occurrence including, for example, pertinent temperatures, pressures, or other parameters necessary for evaluation of the occurrence and its consequences. If said information is not applicable, enter "Does not apply."
- (18) *Activity Category. Enter one of the following activities that best describes the ongoing activity at the time of the occurrence.
- (a) Construction
 - (b) Maintenance
 - (c) Normal Operations
 - (d) Start-up
 - (e) Shutdown
 - (f) Facility/System/Equipment Testing
 - (g) Training
 - (h) Transportation
 - (i) Emergency Response
 - (j) Inspection/Monitoring
 - (k) Facility Decontamination/Decommissioning
- (19) *Immediate Actions Taken and Results. Describe the immediate or remedial actions taken to return the facility, system, or equipment item to service; to correct or alleviate the anomalous condition; and to record the results of those actions. These may include temporary measures to keep the facility in a safe standby condition or to permit continued operation of the facility without compromising safety until a more thorough investigation or permanent solution can be effected. For contamination events, include the information described in Paragraph C, Reporting Radiological Contamination Occurrences, below.

- (20)-(22) **#Cause.** The cause must be thoroughly addressed as the information becomes available. Enter the cause(s) that best describes the apparent root, direct and contributing cause(s), if applicable. Only one direct and root cause may be entered, but up to three contributing causes may be entered. In the final evaluation of a reportable occurrence, there must be complete consideration of the cause, including contributory factors, with analysis to show what cause was root to the occurrence and what causes were only contributory. In conducting evaluations of the occurrence to determine the root cause, the use of the critiques and analyses described in DOE-NE-STD-1004-92 (Reference G) are encouraged. The possible entries are the same for all three cause fields. The direct, contributing, and root causes of reportable occurrences are classified into seven broad categories and various subcategories. The seven categories of causes and their associated subcategories are as follows:

Equipment/Material Problem. An event or condition resulting from the failure, malfunction, or deterioration of equipment or parts, including instruments or material:

- (a) Defective or Failed Part. A part/instrument that lacks something essential to perform its intended function.
- (b) Defective or Failed Material. A material defect or failure.
- (c) Defective Weld, Braze, or Soldered Joint. A specific weld/joint defect or failure.
- (d) Error by Manufacturer in Shipping or Marking. An error by the manufacturer or supplier in the shipping or marking of equipment.
- (e) Electrical or Instrument Noise. An unwanted signal or disturbance that interferes with the operation of equipment.
- (f) Contaminant. Failure or degradation due to radiation damage or foreign material such as dirt, crud, or impurities.
- (g) End of Life Failure. A failure where the equipment or material is run to failure and has reached its end of design life.

Procedure Problem. An event or condition that can be traced to the lack of a procedure, an error in a procedure, or a procedural deficiency or inadequacy.

- (a) Defective or Inadequate Procedure. A procedure that either contains an error or lacks something essential to the successful performance of the activity.
- (b) Lack of Procedure. No written procedure was in place to perform the activity.

Personnel Error. An event or condition due to an error, mistake, or oversight.

- (a) Inattention to Detail. Inadequate attention to the specific details of the task.
- (b) Procedure Not Used or Used Incorrectly. The failure to use or the inappropriate use of written instructions, procedures, or other documentation.
- (c) Communication Problem. Inadequate presentation or exchange of information.
- (d) Other Human Error. Human error other than those described above.

Design Problem. An event or condition that can be traced to a defect in design or other factors related to configuration, engineering, layout, tolerances, calculations, etc.

- (a) Inadequate Work Environment. Inadequate design of equipment used to communicate information from the facility to a person (e.g., displays, labels, etc.) as well as inadequate

work environment, such as inadequate lighting, working space, or other human factor considerations.

- (b) Inadequate or Defective Design. A design in which something essential was lacking (defective) or when a detail was included but was not adequate for the requirement (inadequate).
- (c) Error in Equipment or Material Selection. A mistake in the equipment or material selection only, not to include a procurement error (see Personnel Error, (e) Other Human Error) or a specification error (see Design Problem, (d) Drawing, Specification, or Data Errors).
- (d) Drawing, Specification, or Data Errors. An error in the calculation, information, or specification of a design.

Training Deficiency. An event or condition that can be traced to a lack of training or insufficient training to enable a person to perform a desired task adequately.

- (a) No Training Provided. A lack of appropriate training.
- (b) Insufficient Practice or Hands-On Experience. An inadequate amount of preparation before performing the activity.
- (c) Inadequate Content. The knowledge and skills required to perform the task or job were not identified.
- (d) Insufficient Refresher Training. The frequency of refresher training was not sufficient to maintain the required knowledge and skills.
- (e) Inadequate Presentation or Materials. The training presentation or materials were insufficient to provide adequate instruction.

Management Problem. An event or condition that can be directly traced to managerial actions or methods.

- (a) Inadequate Administrative Control. A deficiency in the controls in place to administer and direct activities.
- (b) Work Organization/Planning Deficiency. A deficiency in the planning, scoping, assignment, or scheduling of work.
- (c) Inadequate Supervision. Inadequate techniques used to direct workers in the accomplishment of tasks.
- (d) Improper Resource Allocation. Improper personnel or material allocation resulting in the inability to successfully perform assigned tasks.
- (e) Policy Not Adequately Defined, Disseminated, or Enforced. Inadequate description, distribution, or enforcement of policies and expectations.
- (f) Other Management Problem. A management problem other than those defined above.

External Phenomena. An event or condition caused by factors that are not under the control of the reporting organization or the suppliers of the failed equipment or service.

- (a) Weather or Ambient Condition. Unusual weather or ambient conditions, including hurricanes, tornadoes, flooding, earthquake, and lightning.

- (b) Power Failure or Transient. Special cases of power loss that are attributable to outside supplied power.
- (c) External Fire or Explosion. An external fire, explosion, or implosion.
- (d) Theft, Tampering, Sabotage, or Vandalism. Theft, tampering, sabotage, or vandalism that could not have been prevented by the reporting organization.

Radiological/Hazardous Material Problem. An event related to radiological or hazardous material contamination that cannot be attributed to any of the other causes.

- (a) Legacy Contamination. Radiological or hazardous material contamination attributed to past practices.
- (b) Source Unknown. Radiological or hazardous material contamination where the source cannot be reasonably determined.

Specific information pertaining to each cause field; (20), (21), and (22), is as follows.

- (20) #Direct Cause. The cause that directly resulted in the occurrence. Enter only one direct cause for the occurrence. One subcategory for the direct cause selected must also be checked. The direct cause is not required for Update Reports; however, it is required for Final Reports.

For example, in the case of a leak, the direct cause could have been the failure in the component or equipment that leaked. In the case of a system misalignment, the direct cause could have been operator error in the alignment.

- (21) Contributing Causes. The cause(s) that contributed to the occurrence but, that by itself, would not have caused the occurrence. Enter as many as three contributing causes for the occurrence. One subcategory for each of the contributing causes must also be checked. This is not a required field.

For example, in the case of a leak, the contributing cause could be lack of adequate operator training in leak detection and response resulting in a more severe event than would have otherwise occurred. In the case of a system misalignment, the contributing cause could be excessive distractions to the operators during shift, resulting in less than adequate attention to important details during system alignment.

- (22) #Root Cause. The cause that, if corrected, would prevent recurrence of this and similar occurrences. The root cause does not apply to this occurrence only, but has generic implications to a broad group of possible occurrences, and it is the most fundamental aspect of the cause that can logically be identified and corrected. There may be a series of causes that can be identified, one leading to another. This series should be pursued until the most fundamental, correctable cause has been identified. Check only one root cause for the occurrence. One subcategory for the root cause selected must also be checked. The root cause is not required for Update Reports; it is, however, required for Final Reports.

For example, in the case of a leak, the root cause could be a failure of management to ensure that maintenance is effectively managed and controlled. This cause could have led to the use of improper seal material or missed preventive maintenance on a component, which ultimately led to the failure. In the case of a system misalignment, the root cause could be failure in the training program, leading to a situation in which operators are not fully familiar with control room procedures and are willing to accept excessive distractions.

- (23) #Description of Cause. Discuss the cause of the occurrence to include root, direct, and contributing causes, if applicable, and the corrective actions identified. Do not repeat a description of the occurrence but discuss the results of the causal analysis. The root cause analysis methodology used shall be identified. A detailed description of the corrective actions is

required to demonstrate that the identified actions will adequately address the cause(s) of the problem.

For example, if a procedural deficiency was identified, it would not be sufficient to state simply that the procedure was revised. An explanation is required regarding why the deficiency was not identified during the review and approval process (to the extent possible); how the procedure was subsequently revised; and how the revision, in conjunction with any other corrective actions, addresses the cause of the problem.

When appropriate, separate documentation for the root cause analysis may be attached. If ORPS is being used, the separate documentation should be referenced as attachments to the Occurrence Report, with specifics as to where or from whom they can be obtained.

Reports of suspect/counterfeit products (Group 7B) shall include the text "suspectcounterfeit products" in this section to facilitate searches.

This field is not required for Update Reports; it is, however, required for Final Reports.

- (24) #Evaluation by Facility Manager. With the information available, the cognizant line manager should provide his or her evaluation of the occurrence and its effect or possible effect on the plant, system, program, etc. in the Update Report, and an explanation for the delay in completing a Final report. The line manager may later supplement this evaluation with additional entries in Update Reports or in the Final Report. This field is required on a Notification Report if the responses to Item 25, Is Further Evaluation Required, are "Yes," further evaluation is required, and "Yes," the evaluation is required before further operation.
- (25) *Is Further Evaluation Required? Check "Yes" or "No." This is a required field on all reports. Identify By Whom: with title only and provide expected date in the By When: field. This response should not be "Yes" in a Final Report since further evaluation could change the root cause or identify additional corrective actions

If further evaluation is required, then "Yes" or "No" must be checked as to whether that evaluation is required before further operation.

If further evaluation is required before further operation (i.e., both "Yes" blocks checked), then the individual(s) who will take the action (a person's title or a specific organizational unit) and a date when the action will be taken must be provided. Field # 24 should be completed if "Yes" is checked in both blocks. Also, when completing an Update Report, this field should be filled out with the name of the person responsible for completion of the further evaluation, and the expected new date for completion of the Final Report.

- (26) #Corrective Actions. List all actions identified to correct the problem that, when completed, will prevent recurrence. The first two lines of each corrective action should be a title or summary of the corrective action. In addition, provide actual or target completion dates for all of the corrective actions listed.

For similar occurrences previously documented in an approved Final Report (as discussed in Paragraph G[2]), the corrective action narrative should state, "The corrective actions are the same as those stated in the original approved Final Report" and provide the original approved Final Report number; the corrective action target date should be the latest target date on the original approved Final Report; and the corrective action completion date should be the final actual completion date for all of the corrective actions (i.e., the field will remain empty until completion of all of the corrective actions).

This field is not required for Update Reports; however, it is required for Final Reports.

- (27) #Impact on Environment, Safety, and Health. Provide an assessment of the environment, safety, and health consequences and implications of the occurrence. Describe the impact of the occurrence on the environment, safety, and health of workers, the public, and onsite/offsite environs. This should include amounts and types of hazardous or radioactive materials released,

levels and types of contamination, exposure levels of workers and the public, and known or projected environmental, safety, and health impacts. This assessment may be based on existing conditions. The evaluation must be carried out to the extent necessary to fully assess the safety consequences and safety margins associated with the occurrence.

For an occurrence related to nuclear safety, an assessment of the occurrence under alternative conditions must also be included if the occurrence could have been more severe (e.g., the facility would have been in a condition not analyzed in the Safety Analysis Report) under reasonable and credible alternative conditions such as power level or operating mode. For example, if the occurrence happened while the facility was at 15 percent power and the same occurrence could have taken place while the facility was at 100 percent power, and, as a result, the environment, safety, or health consequences would have been considerably more serious, the assessment must describe those conditions and consequences.

For contamination events, include the information described in Paragraph C below.

This field is not required for Update Reports; it is, however, required for Final Reports.

- (28) #Programmatic Impact. Describe the impact of the occurrence on the program or project affected. This could be a loss of data, loss of plant availability for a specified period, additional costs, schedule delays, or other measurable consequences of the occurrence.

This field is not required for Update Reports; it is, however, required for Final Reports.

- (29) #Impact Upon Codes and Standards. If the occurrence affects the requirements of national codes and standards, program standards, or DOE Orders, a statement regarding the adequacy of the codes or standards should be provided, along with any recommended changes.

This field is not required for Update Reports; it is, however, required for Final Reports.

- (30) #Lessons Learned. Include any lessons learned from the occurrence that could be of importance to other facility operators or that should be addressed in personnel training or facility procedures.

This field not required for Update Reports; it is, however, required for Final Reports.

- (31) #Similar Occurrence Report Numbers. Indicate by their report numbers any similar occurrence(s) of which you are aware for this or other facilities. The purpose of this item is to identify, if recognized, occurrences that might suggest a generic problem that may result in single or common lessons learned.

This field not required for Update Reports; it is, however, required for Final Reports.

- (32) User-defined Field #1. This optional field can be used by the Facility Manager to store facility-specific information (e.g., a cross-reference to performance indicator data).

- (33) User-defined Field #2. This optional field can be used by the Facility Manager to store additional facility-specific information (e.g., a cross-reference to a site-specific number or name).

- (34) #DOE Facility Representative Input. The DOE Facility Representative or designee should provide his or her evaluation of the occurrence, including an evaluation of the initial and proposed corrective actions and any follow-up by the contractor, and should describe any other actions that DOE has taken since the occurrence. The Facility Representative may supplement such information with subsequent additional entries, as appropriate. After completing the input, enter the Facility Representative's name and the date. If ORPS is being used, the Facility Representative's name and the date will be automatically entered by the computer. If a Final Report is being rejected, the DOE Facility Representative shall use this space to indicate why.

This field is required only on Final Reports rejected by the Facility Representative.

- (35) #Program Manager Input. The Program Manager or designee should provide his or her evaluation of the occurrence, including an evaluation of the initial and proposed corrective actions and any follow-up, and should describe any other actions that DOE has taken since the occurrence. The Program Manager may include additional entries as appropriate. After completing the input, enter the Program Manager's name and the date. If ORPS is being used, the Program Manager's name and the date will be automatically entered by the computer. If a Final Report is being rejected, the Program Manager shall use this space to indicate why. If the approval authority for Off-Normal reports has been delegated to the Facility Representative, then the Program Manager will only be able to provide comments on the Off-Normal Final Report prior to approval of the report by the Facility Representative.

This field is required only on Final Reports rejected by the Program Manager.

- (36) #Signatures. For Final Reports that are transmitted in hardcopy (i.e., classified reports), all three signatures, with typed names and titles, shall be included prior to distribution. If ORPS is being used, the Facility Manager's or designee's name, as described and entered in Attachment III.A(4), will automatically be entered with an indication of acceptance. The Final Report will then be available for the Facility Representative and Program Manager, or their designees, to review and accept. Once all three individuals have accepted the report, it will automatically be available to all DOE Elements for their use in analysis and trending.

This field is required for Final Reports only.

C. Reporting Radiological Contamination Occurrences

The information provided on the following pages provides guidance for completing an Occurrence Report under Group 1D or Group 4B of these procedures.

The information provided for Item 16, "Description of Contamination Occurrence", Item 19, "Immediate Action in Response to Contamination Occurrence," and Item 27, "Impact on Environment, Safety and Health," should be completed or reviewed by qualified radiological control personnel (e.g., the Radiological Control Manager, health physicists, qualified radiological control technicians, or supervisory personnel). The health consequence (e.g., severity or significance) of the contamination occurrence is specified in Item 27 of an Occurrence Report.

Where the information regarding an occurrence is preliminary, the notification of such occurrences should be prefaced with remarks to the effect that:

"The contamination occurrence is based on preliminary information available at the time of the report. This information will be updated when further evaluation has been completed."

(1) Personnel Contamination Occurrences

Description of Contamination Occurrence — Item 16

Type of Information	Suggested Statements
1. Number and types of individuals	a. Contamination event involves single individual. b. Contamination event involves ____ individuals. c. Type of individual: radiation worker, general employee, member of the public, minor, visiting scientist or researcher, visiting DOE or other federal employee.

2. Type of contamination event	<ul style="list-style-type: none"> a. Only personal clothing of worker contaminated. b. Skin contamination involved. c. Potential internal contamination from inhalation/ingestion, further assessment being performed. d. Facial/nasal contamination, possible internal contamination e. Internal contamination confirmed by bioassay. f. Radionuclide(s) involved if known. State general category (e.g., beta and/or gamma, alpha, etc.) if known.
3. Extent of contamination	<ul style="list-style-type: none"> a. Appropriate description of clothing (e.g., pants, shoes, shirt, etc.). b. Confined to limited area of body (e.g., tip of right index finger, hot particle on left shoulder, palm of right hand, etc.). c. In not confined, state area of body involved. d. Maximum detected activity: _____ dpm/100 cm².
4. Location (area) where contamination occurred and worker activity	<ul style="list-style-type: none"> a. Occurred inside of radiological area (e.g., Contamination Area, High Contamination Area, Airborne Radioactivity Area). b. Occurred outside of radiological area, but onsite or within the facility. c. State worker activity being performed at time of occurrence.
5. Significance of occurrence relative to operations	<ul style="list-style-type: none"> a. Isolated event confined to room/facility/building/area. b. Event resulting from equipment or protective clothing malfunction. c. Event resulting from procedural violation or deficiency. d. Recurrent event.

Immediate Action in Response to Contamination Occurrence — Item 19

Type of Information	Suggested Statements
1. Status of decontamination	<ul style="list-style-type: none"> a. Personal clothing retained. b. Individual(s) successfully decontaminated below detectable levels. c. Individual(s) decontaminated below reporting criteria; however, residual contamination persists. d. Medical assistance required.

Impact on Worker Health Due to Contamination Occurrence — Item 27

Type of Information	Suggested Statements
1. Relative health consequence	<ul style="list-style-type: none"> a. Less than/approaching ____% of the annual deep or shallow DOE skin, lens of the eye, extremity, and/or committed effective dose limit (for any internal intake) as applicable. (Do not provide comparison to site or facility administrative control level). No health consequence to individual(s). b. Greater than applicable DOE limit, potential health consequence being evaluated. Evaluation to be initiated pursuant to DOE 5485.1 requirements. c. Concurrent injury requiring medical assistance onsite/offsite. State Option (a) or (b), as applicable, and nature of injury. d. No concurrent injury. State Option (a) or (b), as applicable. Indicate whether decontamination required onsite/offsite medical assistance.

(2)..... Area or Facility Contamination Occurrences**Description of Contamination Occurrence — Item 16**

Type of Information	Suggested Statements
1. Location of occurrence	a. Room b. Building c. Facility d. Area e. Site
2. Type of contamination	a. Spill or loss of containment. b. Airborne release. c. Fixed/loose surface contamination. d. Radionuclide(s) involved if known. State general category (e.g., beta and/or gamma, alpha, etc.) if known.
3. Extent of contamination	a. Total area involved is ____ ft ² . b. Confined within room/building/facility/area/site. c. Release beyond or containment within above locations, as applicable.
4. Impact on operations	a. Normal operation not impacted. b. Designated equipment removed from service. c. Personnel access restricted until cleanup is completed.

Immediate Action in Response to Contamination Occurrence — Item 19

Type of Information	Suggested Statements
1. Status of control and decontamination	a. Affected area controlled and/or isolated to prevent spread of contamination. b. Decontamination initiated or completed.

Impact on Worker Health Due to Contamination Occurrence — Item 27

Type of Information	Suggested Statements
1. Status of control	a. No contamination of individual(s) on-site. b. No potential for further spread of contamination. c. Affected area decontaminated.
2. Significance relative to applicable limits	a. Maximum contamination levels ____ dpm/100 cm ² and units of curie per 100 cm ² . b. Comparison with 10 CFR 835, appendix D values. Evaluation to be initiated pursuant to DOE Order 225.1 dependent upon level by which appendix D values are exceeded. c. General area dose rate as measured at 1 meter above contaminated surface. d. If worker involved, relate dose rate to actual dose received based on occupancy time spent in the contaminated area. e. No health consequence to worker if less than applicable dose limit. If worker contaminated, implement responses for personnel contaminated provided above.

OCCURRENCE REPORT FORM

LAWRENCE LIVERMORE NATIONAL LABORATORY

FACILITY FUNCTION INVOLVED: (check only one)

<input type="checkbox"/> Plutonium Processing/Handling <input type="checkbox"/> SNM Storage <input type="checkbox"/> Explosive <input type="checkbox"/> Uranium Enrichment <input type="checkbox"/> Uranium Conversion/Processing/Handling <input type="checkbox"/> Irradiated Fissile Material Storage <input type="checkbox"/> Reprocessing <input type="checkbox"/> Nuclear Waste Operations/Disposal <input type="checkbox"/> Tritium Activities	<input type="checkbox"/> Fusion Activities <input type="checkbox"/> Environmental Restoration Operations <input type="checkbox"/> Category "A" Reactors <input type="checkbox"/> Category "B" Reactors <input type="checkbox"/> Solar Activities <input type="checkbox"/> Fossil and Petroleum Reserves <input type="checkbox"/> Accelerators <input type="checkbox"/> Balance-of-Plant
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NAME OF LABORATORY DIRECTORATE/ORGANIZATION:**COGNIZANT ASSOCIATE DIRECTOR OR DESIGNEE:**

Name: _____

Title: _____ Telephone No.: _____

ORIGINATOR:

Name: _____

Title: _____ Telephone No.: _____

CHOOSE ONE OF THESE THREE STATEMENTS:
☐ This report has been reviewed by an authorized derivative classifier and determined to be unclassified.

Name: _____ Signature: _____

Authorized Derivative Classifier

☐ This report is from a designated unclassified subject area (DUSA). Initials: _____

☐ This report contains administrative information only. Initials: _____
1. OCCURRENCE REPORT NUMBER: _____**2. REPORT TYPE AND DATE:**
☐ Notification Report
☐ Update Report
☐ Final Report

Date _____ Time _____

3. OCCURRENCE CATEGORY: (check only one)
☐ Emergency ☐ Unusual ☐ Off-Normal ☐ Canceled
4. NUMBER OF OCCURRENCES: _____**5. DIVISION OR PROJECT:** _____

6. DOE SECRETARIAL OFFICE: (check only one)

☐
☐

DP

EE

☐
☐

EH

EI

☐
☐

EM

ER

☐
☐

FE

HR

☐
☐

NE

NN

☐

RW

7. SYSTEM, BLDG., OR EQUIPMENT:

8. UCNI:

Yes

☐

No

☐

9. PLANT AREA:

10. DATE AND TIME DISCOVERED:

11. DATE AND TIME CATEGORIZED:

12. DATE AND TIME OF DOE NOTIFICATION:

13. DATE AND TIME OF OTHER NOTIFICATIONS:

14. SUBJECT OR TITLE OF OCCURRENCE:

15. NATURE OF OCCURRENCE: (check up to three)

<input type="checkbox"/>	Facility Condition
<input type="checkbox"/>	Nuclear Criticality Safety
<input type="checkbox"/>	Fires/Explosions
<input type="checkbox"/>	Safety Status Degradation
<input type="checkbox"/>	Loss of Control of Radioactive Material/Spread of Radioactive Contamination
<input type="checkbox"/>	Safety Structure, System, or Component (SCC) Degradation
<input type="checkbox"/>	Violation/Inadequate Procedures
<input type="checkbox"/>	Oversight Activities
<input type="checkbox"/>	Operations
<input type="checkbox"/>	Environmental
<input type="checkbox"/>	Radionuclide Releases
<input type="checkbox"/>	Release of Hazardous Substance/Regulated Pollutants/Oil
<input type="checkbox"/>	Discovery of Hazardous Material Contamination
<input type="checkbox"/>	Ecological Resources
<input type="checkbox"/>	Environmental Agreement/Compliance Activities
<input type="checkbox"/>	Personnel Safety
<input type="checkbox"/>	Occupational Illness/Injuries
<input type="checkbox"/>	Vehicular Incidents
<input type="checkbox"/>	Safety Concern
<input type="checkbox"/>	Personnel Radiation Protection
<input type="checkbox"/>	Radiation Exposure
<input type="checkbox"/>	Personnel Contamination
<input type="checkbox"/>	Safeguards/Security
<input type="checkbox"/>	Criminal Acts
<input type="checkbox"/>	Unaccounted for Classified Matter or Compromised Information
<input type="checkbox"/>	Substance Abuse
<input type="checkbox"/>	Intelligence Activities
<input type="checkbox"/>	Physical Security System Computer
<input type="checkbox"/>	Unplanned/Unscheduled Outage of Site Security System
<input type="checkbox"/>	Demonstrations/Protests
<input type="checkbox"/>	Firearms
<input type="checkbox"/>	Other Security Concerns
<input type="checkbox"/>	Material Control and Accountability
<input type="checkbox"/>	Transportation
<input type="checkbox"/>	Offsite Transportation (DOT jurisdiction) Occurrences
<input type="checkbox"/>	Onsite Transportation (non-DOT jurisdiction) Occurrences
<input type="checkbox"/>	Value Basis Reporting
<input type="checkbox"/>	Cost Based
<input type="checkbox"/>	Defective Item, Material, or Service
<input type="checkbox"/>	Facility Status
<input type="checkbox"/>	Facility/Process/Activity Unscheduled Shutdown
<input type="checkbox"/>	Existing Facility/Process/Activity Shutdown Extension
<input type="checkbox"/>	New Facility/Process/Activity Startup Delay
<input type="checkbox"/>	Nuclear Explosive Safety
<input type="checkbox"/>	Cross-Category Items
<input type="checkbox"/>	Collectively Significant Related Occurrences
<input type="checkbox"/>	Near Miss Occurrences
<input type="checkbox"/>	Potential Concerns/Issues

16. DESCRIPTION OF OCCURRENCE:**17. OPERATING CONDITIONS OF FACILITY AT TIME OF OCCURRENCE:****18. ACTIVITY CATEGORY:** (check only one)

- ☐ Construction
☐ Maintenance
☐ Normal Operations
☐ Startup
☐ Shutdown
☐ Facility/System/Equipment Testing

- ☐ Training
☐ Transportation
☐ Emergency Response
☐ Inspection/Monitoring
☐ Facility Decontamination/Decommissioning

19. IMMEDIATE ACTIONS TAKEN AND RESULTS:**20. DIRECT CAUSE** (check only one direct cause category and check one and only one subcategory within the selected direct cause category)

- ☐ **Equipment/Material Problem**
☐ Defective or Failed Part
☐ Defective or Failed Material
☐ Defective Weld, Braze, or Soldered Joint
☐ Error by Manufacturer in Shipping or Marking
☐ Electrical or Instrument Noise
☐ Contaminant
☐ End-of-Life Failure
☐ **Procedure Problem**
☐ Defective or Inadequate Procedure
☐ Lack of Procedure
☐ **Personnel Error**
☐ Inattention to Detail
☐ Procedure Not Used or Used Incorrectly
☐ Communication Problem
☐ Other Human Error
☐ **Design Problem**
☐ Inadequate Work Environment
☐ Inadequate or Defective Design
☐ Error in Equipment or Material Selection
☐ Drawing, Specification, or Data Errors

- ☐ **Training Deficiency**
☐ No Training Provided
☐ Insufficient Practice or Hands-On Experience
☐ Inadequate Content
☐ Insufficient Refresher Training
☐ Inadequate Presentation or Materials
☐ **Management Problem**
☐ Inadequate Administrative Control
☐ Work Organization/Planning Deficiency
☐ Inadequate Supervision
☐ Improper Resource Allocation
☐ Policy Not Adequately Defined/Disseminated/Enforced
☐ Other Management Problem
☐ **External Phenomena**
☐ Weather or Ambient Condition
☐ Power Failure or Transient
☐ External Fire or Explosion
☐ Theft, Tampering, Sabotage, Vandalism
☐ **Radiological/HazMat Problem**
☐ Legacy Contamination
☐ Source Unknown

21. CONTRIBUTING CAUSE: (Check up to three contributing cause categories and check one and only one subcategory within each selected contributing cause category.)

<input type="checkbox"/> Equipment/Material Problem	<input type="checkbox"/> Training Deficiency
<input type="checkbox"/> Defective or Failed Part	<input type="checkbox"/> No Training Provided
<input type="checkbox"/> Defective or Failed Material	<input type="checkbox"/> Insufficient Practice or Hands-On Experience
<input type="checkbox"/> Defective Weld, Braze, or Soldered Joint	<input type="checkbox"/> Inadequate Content
<input type="checkbox"/> Error by Manufacturer in Shipping or Marking	<input type="checkbox"/> Insufficient Refresher Training
<input type="checkbox"/> Electrical or Instrument Noise	<input type="checkbox"/> Inadequate Presentation or Materials
<input type="checkbox"/> Contaminant	<input type="checkbox"/> Management Problem
<input type="checkbox"/> End-of-Life Failure	<input type="checkbox"/> Inadequate Administrative Control
<input type="checkbox"/> Procedure Problem	<input type="checkbox"/> Work Organization/Planning Deficiency
<input type="checkbox"/> Defective or Inadequate Procedure	<input type="checkbox"/> Inadequate Supervision
<input type="checkbox"/> Lack of Procedure	<input type="checkbox"/> Improper Resource Allocation
<input type="checkbox"/> Personnel Error	<input type="checkbox"/> Policy Not Adequately
<input type="checkbox"/> Inattention to Detail	<input type="checkbox"/> Defined/Disseminated/Enforced
<input type="checkbox"/> Procedure Not Used or Used Incorrectly	<input type="checkbox"/> Other Management Problem
<input type="checkbox"/> Communication Problem	<input type="checkbox"/> External Phenomena
<input type="checkbox"/> Other Human Error	<input type="checkbox"/> Weather or Ambient Condition
<input type="checkbox"/> Design Problem	<input type="checkbox"/> Power Failure or Transient
<input type="checkbox"/> Inadequate Work Environment	<input type="checkbox"/> External Fire or Explosion
<input type="checkbox"/> Inadequate or Defective Design	<input type="checkbox"/> Theft, Tampering, Sabotage, Vandalism
<input type="checkbox"/> Error in Equipment or Material Selection	<input type="checkbox"/> Radiological/HazMat Problem
<input type="checkbox"/> Drawing, Specification, or Data Errors	<input type="checkbox"/> Legacy Contamination
	<input type="checkbox"/> Source Unknown

22. ROOT CAUSE: (check only one root cause category and check one and only one subcategory within the selected root cause category.)

<input type="checkbox"/> Equipment/Material Problem	<input type="checkbox"/> Training Deficiency
<input type="checkbox"/> Defective or Failed Part	<input type="checkbox"/> No Training Provided
<input type="checkbox"/> Defective or Failed Material	<input type="checkbox"/> Insufficient Practice or Hands-On Experience
<input type="checkbox"/> Defective Weld, Braze, or Soldered Joint	<input type="checkbox"/> Inadequate Content
<input type="checkbox"/> Error by Manufacturer in Shipping or Marking	<input type="checkbox"/> Insufficient Refresher Training
<input type="checkbox"/> Electrical or Instrument Noise	<input type="checkbox"/> Inadequate Presentation or Materials
<input type="checkbox"/> Contaminant	<input type="checkbox"/> Management Problem
<input type="checkbox"/> End-of-Life Failure	<input type="checkbox"/> Inadequate Administrative Control
<input type="checkbox"/> Procedure Problem	<input type="checkbox"/> Work Organization/Planning Deficiency
<input type="checkbox"/> Defective or Inadequate Procedure	<input type="checkbox"/> Inadequate Supervision
<input type="checkbox"/> Lack of Procedure	<input type="checkbox"/> Improper Resource Allocation
<input type="checkbox"/> Personnel Error	<input type="checkbox"/> Policy Not Adequately
<input type="checkbox"/> Inattention to Detail	<input type="checkbox"/> Defined/Disseminated/Enforced
<input type="checkbox"/> Procedure Not Used or Used Incorrectly	<input type="checkbox"/> Other Management Problem
<input type="checkbox"/> Communication Problem	<input type="checkbox"/> External Phenomena
<input type="checkbox"/> Other Human Error	<input type="checkbox"/> Weather or Ambient Condition
<input type="checkbox"/> Design Problem	<input type="checkbox"/> Power Failure or Transient
<input type="checkbox"/> Inadequate Work Environment	<input type="checkbox"/> External Fire or Explosion
<input type="checkbox"/> Inadequate or Defective Design	<input type="checkbox"/> Theft, Tampering, Sabotage, Vandalism
<input type="checkbox"/> Error in Equipment or Material Selection	<input type="checkbox"/> Radiological/HazMat Problem
<input type="checkbox"/> Drawing, Specification, or Data Errors	<input type="checkbox"/> Legacy Contamination
	<input type="checkbox"/> Source Unknown

23. DESCRIPTION OF CAUSE:**24. EVALUATION:** (By Cognizant Associate Director or Designee)**25. IS FURTHER EVALUATION REQUIRED:** Yes ☐ No ☐IF YES, BEFORE FURTHER OPERATION: Yes ☐ No ☐

IF, YES, BY WHOM: _____ BY WHEN: _____

26. CORRECTIVE ACTIONS:

Corrective Action	Target Completion Date	Actual Completion Date
_____	_____	_____

27. IMPACT ON ENVIRONMENT, SAFETY, AND HEALTH:**28. PROGRAMMATIC IMPACT:****29. IMPACT UPON CODES AND STANDARDS:****30. LESSONS LEARNED:****31. SIMILAR OCCURRENCE REPORT NUMBERS:****32. USER-DEFINED FIELD #1:** _____**33. USER-DEFINED FIELD #2:** _____**34. DOE FACILITY REPRESENTATIVE INPUT:** (leave blank) _____**35. PROGRAM MANAGER INPUT:** (leave blank)**36. SIGNATURES:**

COGNIZANT ASSOCIATE DIRECTOR/DESIGNEE

Signed by: _____ Date: _____

Typed Name: _____